

Seneca Falls Team Service

AMERICAN RAILROAD JOURNAL.

504

AMERICAN RAILROAD JOURNAL,

IRON MANUFACTURER'S AND MINING GAZETTE.

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Cast Iron Railroad Chairs.

We ask the attention of those interested to the following advertisement of the Hudson River railroad company.

HUDSON RIVER RAILROAD COMPANY. Notice for Proposals for Cast Iron Chairs.—Sealed proposals will be received by the Directors of the Hudson River Railroad Company, at their office, No. 54 Wall street, until the 15th day of July next, for one million pounds (equal to 500 tons) of Cast Iron Chairs. The proposition to specify the price per pound, or per ton, delivered on the line of said Railroad, at such wharf or wharves in common use as may be designated by the Chief Engineer in the employ of the said Company.

The Chairs to be cast from re-melted iron of a good quality, that will make smooth and tough castings. A sample of the castings may be seen at the office of the company in New York, and at the engineer's office in Poughkeepsie. It will be required that the Chairs, in all particulars, as to dimensions and quality of iron, be according to the pattern furnished, so as not to require chipping to receive the rails, nor allow the rails to setto loosely in the chair.

The Chairs to be delivered, one-third in the month of November next, one-third on the opening of the navigation of the Hudson next spring, and the balance by the 15th of April next.

The party to any proposition that may be accepted, will be required to enter into contract immediately after the acceptance of the same. The Directors reserve to themselves the right to accept or reject proposals that may be offered, as they may consider the interest of the company to require.

A. C. FLAGG, President.

JOHN B. JERVIS, Chief Engineer.

New York, June 14th, 1848.

miles. From Ashland to Shamokin, where the Sunbury road terminates, is about the same distance.

So that the construction of a road of about 24 miles in length, would connect the Susquehanna, at Sunbury, with Philadelphia. This portion of the road runs through one of the richest coal regions of Pennsylvania, and would consequently yield a very handsome dividend to the stockholders. There can be no doubt that this road will be completed in a very short time.

Post Office Department and the Railroads.

We are pleased to learn that the senate committee have reported in favor of, and offered a joint resolution, which has been passed by a large majority, requiring the postmaster-general to make arrangements with the Richmond, Fredericksburg, and Potowmack railroad co., for carrying the mail as usual.

This is just as it should be, and we hope the house of representatives will promptly concur—that we may again have some regularity in the mails.

Since writing the above, we have read the report of the committee, which comes to precisely the conclusion that we should suppose an honest man, seeing the whole matter, without prejudice, would come to; and the following extract from the report, which we may publish entire—gives to the postmaster-general a wholesome rebuke, which would induce a high-minded gentleman to resign his post at once—but such will not be its influence on a man who lets his *passions*, and *prejudices*, urge him into a course of measures—under the plea of *conscience*—injurious alike to the people, whose servant he is, and to the department over which he—in an unlucky moment—was called to preside.

The extract referred to is as follows, viz.—"Upon the whole, therefore, it is very clear to the committee, that the postmaster-general was not restricted by a proper construction of the law, to \$337 50 per mile, which was his offer to the Virginia company. And, though they give him credit for a vigilant watch over the interests of the department, and are sensible how easily incorporated companies, as well as individuals, may be induced to demand of the government more than a service is really worth, they must think that he would have consulted the requirement of the law, the economy of the public money, and the efficiency of the mail service, by renewing the contract with the company for the same sum as that which he had been paying for more than two years after he came into office."

The Mad River and Lake Erie Railroad.

This road is beginning to do a very good business in the way of passengers—the cars coming in well filled, every day. Yesterday and the day before, says the Sandusky Clarion, there were near 150; and the steamboats have been well filled on their downward trips.

Mine Hill Railroad.

We learn by the Sunbury Gazette, says the Keystone, that the Mine Hill railroad company, which received a grant, at the last session of the Legislature, to extend their road into the middle coal field, are about to avail themselves of this privilege. It seems that they have employed Solomon W. Roberts, Esq., who is highly spoken of as an engineer, to run and locate a road from Coal Castle, the present termination of their road, to Shamokin. The distance from Coal Castle to Ashland is about 12

Pennsylvania Central Railroad.

The Harrisburg Pa. Keystone says that the work upon this important improvement is progressing steadily. Many portions of it between this point and Clark's Ferry, are graded and ready for the superstructure, the materials for which are being rapidly delivered. The stone work of the bridge across the Susquehanna, five miles above town, is in great forwardness and will soon be finished. Several thousand hands are at work between this and Lewistown, and the contractors to whom the work has been let, from that point to above Huntingdon, are preparing to commence operations. The remainder of the entire line, thence to Pittsburg is either located or in process of location. Our Pittsburg friends, who have decided upon so liberal a subscription, may therefore be encouraged with the cheering prospect of soon being united with us by railroad. The idea of bringing such good neighbors so near, and of multiplying business relations, with them, is certainly gratifying to us in the east.

Extension of the Baltimore and Ohio Railroad.

"The preliminary surveys being sufficiently advanced, says the Baltimore Patriot, we learn that the directors of the Baltimore and Ohio railroad company have secured the services of Capt. Child, the eminent New England engineer, and of Jonathan Knight, well known in this community, who, in conjunction with Mr. Latrobe, the chief engineer, have already entered upon their duties, and are to proceed forthwith to locate the route, and recommend the best plan of construction for the extension of the railroad within the limits of the charter.

"It is understood that the expediency of extending the road from a point east of Cumberland, will receive the peculiar consideration of the engineers, as presenting not only a route in all respects feasible, but, unless the right of way through the city of Cumberland could be obtained upon reasonable terms, cheaper than a line projected from the depot in that city.

"We are glad to perceive this earnest of a determination by the board of directors to spare no exertions to adopt the best line, and most approved plan of construction of this road, and, at the same time to press our great work forward with the utmost practicable despatch. We do not doubt that in the reputation and skill of the engineers selected, the stockholders have a sure guarantee of a safe and judicious result."

Central Railroad and Banking Company.
"This company has declared, says the Savannah Republican, a dividend of \$2 50 per share for the last six months. We learn that, after appropriating \$20,000 to pay six months dividend on guaranteed stock, and the sum of \$40,000 for new heavy iron rails, and giving the above general dividend of \$2 50 for shares, there is a surplus of over \$10,000 on the operations of the last six months. The order for new bridge rails for ten miles of road, or to the amount of \$40,000, was sent out about a month since. The new rails will weigh 45 pounds to the yard, and will be purchased on the most favorable terms. This is the commencement of laying down heavy rails for the flat bar iron, still in use on one-half of the road. Every cent of expense so incurred will add so much to the actual value of the stock. We congratulate the stockholders of the Central road on the dawn of more auspicious time. The cancelling of the debts of the road, and payment of dividends, has been already attained. We do not doubt that these dividends will be permanent, while

repairs on an improved plan have been going forward with certainty and regularity during many years past."

Wilkes County, Ga. Railroad.

The Marietta Advocate of May 30th, noticing the subscription by our city council of Savannah of \$60,000 to the Wilkes road, so as to secure a connexion of the Georgia and Central roads—remarks:

"The object to be attained by Savannah is the connection between the two roads. No movement has taken place recently so important to the interest of that city. To the up-country of North-western Georgia also, it is especially important."

Referring to the delays occurring at Macon and Augusta, because of the transfer by drayage, from one road to the other, at those places, the editor says:

"The connection will be made at no distant day, if not by one route, then by another. The people of the interior demand it; they are determined to have a continuous railroad line either to Savannah or Charleston."

Most assuredly they will—and to the waters edge at those ports also. There may be delays in accomplishing these desirable objects—but they are sure to be attained in the end—therefore it should be done now—without delay.—[Ed. R. R. J.]

Principles of the Mechanics of Machinery and Engineering.

We are indebted to the publishers, Messrs. Lea & Blanchard of this city, for a copy of the first volume of "Weisbach's Mechanics and Engineering," American edition, edited by Walter R. Johnson, A. M. civil and mining engineer.

This work has been got up in excellent style, printed on good paper, with fair type, and is illustrated by 534 well executed wood cuts, and it will be found useful to every engineer, but especially to those who are but new beginners.

It must not however be inferred, from what we have said, that it is designed only for professional men, as it will be found equally useful to every man who has a desire to understand the reason for, or "cause why" of many things with which he is familiar.

It is divided into six sections, as follows, viz:

1st. *Phoronomy, or the pure mathematical science of motion.*

2d. *Mechanics, or the physical science of motion in general.*

3d. *Statics of rigid bodies.*

4th. *Dynamics of rigid bodies.*

5th. *Statics of fluid bodies.*

6th. *Dynamics of fluid bodies.*

The volume contains 480 pages, which are divided into 394 sections, nearly all of which have one, or more illustrations.

The author says "the mechanics of engineering and machinery" must not be taken for a work on the construction of machines, but it is to be considered merely as an instruction to, or preparatory science for this.

This Treatise of Mechanics is to stand in the same relation to the construction of machines, as descriptive geometry stands to the drawing of machines. After mechanics and descriptive geometry have been learned, the instructions on the construction and the drawing of machines may, with advantage be united in one course.

We shall look with some interest to the publication of the second volume.

It contains comparative tables, of English, French and German measures and weights, which will be found convenient and useful.

The first link between the Lakes and the Atlantic.

The Toledo Blade gives an interesting account of the arrival extraordinary of the first Atlantic steamer at that port. This vessel will run from the Ocean to Chicago. Her arrival is an era in the history of the West. It heralds internal trade, when combined with our mighty rivers, which has never before existed on earth. The Blade says:

"An Atlantic steamer, the "Free Trader," lies in our harbor. She arrived this morning from Montreal, which port she left on Wednesday of last week, stopping by the way at Hamilton, on Lake Ontario, and Port Stanley and Cleveland, on this Lake, making the trip, exclusive of stoppages, in less than six days. The Free Trader is built expressly for Lake and Atlantic trade, and will run as occasion requires, to any ports between Halifax, Nova Scotia, and Chicago, Illinois. What a world we live in! Here is over two thousand miles of river, canal and lake navigation, for vessels and steamboats of a respectable size; and the vast increasing products, of our Western El Dorados, can be transported from the extreme end of Lake Michigan, to any port of the world, with but a single shipment on the Atlantic sea board.

The Free Trader has a capacity for the stowage of 3500 brls. flour; is propelled by a low pressure engine of 75 horse power, and her speed is twelve miles per hour. Her engine is placed in the stern, so as to enable her to make a free passage through the Welland Canal. She is owned and was built by Messrs. Hooker, Horton & Co., of Montreal, and was launched three weeks since. Success to her.

Reading Railroad.

We find the following remarks, in relation to this important work, in the Ledger of the 15th. It appears that the desired object—the conversion of bonds to the amount of \$3,500,000, into stock—has been nearly accomplished. This is an important measure for the company—though it be a *preferred stock*, drawing seven per cent. interest, before the previously issued stock draws a penny—as it relieves them from the obligation to *liquidate* within a few years, a large amount of indebtedness; and it is equally important to the bondholders, as it will give them seven instead of six per cent., and will enable the company hereafter to make dividends to all its stockholders, at least equal to seven per cent. The Ledger says:

"At the meeting of the stockholders of the Reading railroad company in this city yesterday, the law authorizing the conversion of the bonds of the company into preferred stock was unanimously accepted, and the conversion, we understand, has been nearly consummated. Preferred stock was also authorized to be issued for the amount of the company's floating debt, so that there is nothing now in the way of payment of dividends from and after the 1st of January next. The confusion and difficulty heretofore arising from the appropriation of the current receipts to permanent improvement is not to exist hereafter, a resolution having passed, directing the officers of the company not so to apply them for the future, but to devote the whole receipts to payment of interest and to dividends on stock. As the company's affairs now present a clear surface, we shall probably soon know something of the road's real productiveness. The meeting was full and harmonious, and in some remarks by Mr. Derby, a Boston stockholder, it was stated that the road was doing as good a business as many of the best English railroads. A desire to cultivate friendly relations with the Schuylkill navigation company was manifested by the speaker and the meeting, and the time, we think, is not far distant when a mutual understanding will govern the whole of the companies connecting the great coal fields of this State with tidewater, to the great pecuniary advantage of them all, and at no great additional cost individually to the consumers of anthracite coal. Considering how much the owners of the Reading railroad and of the two navigation companies have suffered in pocket, and how much the public have gained in the cheapened price of fuel from

their enterprises, it is but reasonable and just that they should henceforward receive such rates of toll as will fully remunerate them at least for all money expenditures."

If the managers of the road will profit by the advice of Mr. Derry, a stockholder from Boston—and one of the most intelligent, liberal, far-seeing and judicious men of that enterprising city, and of this country—they will be able, we hope, to bring about a system of amicable and equitable arrangements with the navigation companies, which shall ensure to the immense capital invested in works—mainly for the reduction in the cost of fuel—a fair and liberal return. This should be and may be.

The Railroad.

At a meeting of the stockholders of the Burlington and Mount Holly, N. J., railroad company, says the Burlington Gazette, held at the latter place, on the 30th ult., the following gentlemen were elected directors for the company:

Thomas Milnor, George Gaskill, Thomas Dugdale, John C. Ten Eyck, Robert D. Spencer, Abraham Brown, John S. Irick, Wm. N. Lacey.

The directors then proceeded to hold an election for the remaining officers, when Charles Bispham, Esq., was elected president, and George Gaskill secretary and treasurer.

An executive committee was appointed, to confer with engineers and contractors, and to urge the immediate completion of the road. The work will be pushed with vigor, and the probability is, that it will be completed, and the cars running by Christmas. The utmost confidence is felt in the productiveness of the stock. As an evidence of this, we may mention that at the meeting, on Tuesday, one gentleman offered to take the charter and build the road himself, and his experience in such matters, as well as his ability to fulfil his engagement, are well known to the community."

Camden and Amboy Railroad.

Its Privileges and its Abuses.

The course pursued by this gigantic monopoly—because its charter prevents other railroads being built, and therefore prevents competition, or rivalry—is attracting the attention of the independent press.

We find in the Dry Goods Reporter of the 17th, a well-written article, and scorching rebuke, upon the members of the New Jersey legislature, and those editors who pass free over the road, for their course in relation to this company. The editor says,—

"We have had occasion to pass over the New Jersey railroad several times during the last few weeks, and have been surprised that, where so universal a feeling of indignation exists against a corporation so notoriously extortionate as this is felt to be, that so little has been done. We, however, came to the conclusion that if any reform was effected in the present exorbitant charges for freight and passengers, it must originate with, and be carried through, citizens of other States; to expect anything in the shape of assistance in breaking up this monopoly from the citizens of New Jersey, is useless and worse than useless, it is a waste of time as well as money. The legislature of New Jersey were seduced into the granting of the charter of a railroad through that State by a bribe of \$30,000 in stock, which was guaranteed never to yield less than seven per cent.; and although they passed laws regulating the price at which passengers and freight should be carried across their territory, with a transit duty of one dime each, yet they appeared to have legislated under the idea that no one but a Jerseyman would ever have occasion to use the road."

Immediately upon the construction of this road, an association was formed, called the Napoleon company, which established a line to take passengers from the borders of New Jersey to Philadelphia, and vice versa to New York; and thus we find that

if a passage is paid on the Jersey shore, two-thirds only of the passage money is taken. They dare not take more on the Jersey soil. For this reason, an office is established in New York. And in returning, we are obliged to pay on board the boat previous to our arrival in the waters of the State of New Jersey.

Editors, who should be the guardians of the rights of the public, are lulled to sleep by the presentation of free tickets, and the company's advertisement. Members of the legislature have the same boon accorded to them. Citizens of New Jersey are beguiled by the same means, although indirectly—and the merchants of Boston, Philadelphia, and New York, are obliged to foot the balance."

The editor of the Reporter is not quite accurate here. The bonus was at first \$100,000 in stock, ten cents on each passenger, and fifteen cents on each ton of goods passing over the line, and a guarantee that the amount received by the State should not be less, in any one year, than \$30,000; but in 1832 the bonus was increased by another \$100,000 of stock, and last year the amount paid to the State for the original privileges, and the additions to them since granted, was eighty-one thousand dollars.

True as the editor remarks, the merchants of Boston, Philadelphia, and New York, and their customers, have to bear the losses, arising from the extortionate charges—but the people of New Jersey are equal losers by the depressed value of their property and products, for want of competition.

It seems, also, that the writhing of the victims under the heel of oppression, is operating upon the public mind, as we perceive a *counter current* beginning to set.

A writer, who appends to his article the initial D, attempts, in the "city items" of the 17th, to excuse the company for their continued extortion and oppression, by saying that the work was commenced and constructed at a period, and under such restrictions by the State, as rendered it problematical—whether the road would not be a *losing concern in the first years of its operation*—but we like to let people tell their own story—especially when they are engaged in a bad cause—therefore we give D. the full benefit of our circulation, without being invited—and assure him, and the company, that the columns of the *Railroad Journal* are, and have always been open to them.

Camden and Amboy Railroad.—The new arrangement upon this line, by which a mid day train is run at the reduced price of three dollars, meets with general approval, and we are happy to learn that all due credit is given to the company for their spirit of accommodation to a travelling public. Much has been said against the road in regard to its apparent monopoly and high rates of charges. And complaints have been made of many of the officers connected with the running of the trains, which at one time appeared likely to produce an unfavorable prejudice against the road in the minds of those who were willing to rely on hearsay, without judging for themselves.

Now, in regard to the charge of monopoly and extortion, we have a word to say. There are always found in every community, plenty of croakers and cavaliers, whom to please would be a miracle, and to convince by argument a moral impossibility. These men look at the surface of things, and predict facts on appearances, without troubling themselves to examine whether their premises are well founded, or their conclusions correct. From some fancied injustice they may think themselves to have endured, they raise a superstructure of complaint, which at first, appears as if erected by the entire community, but which, viewed closely, is ascertained to be but a harmless fabric of clouds and shadows, that a breath of *real* public opinion dissipates into thinnest vapors.

Is this so? We believe that \$4 is collected at Jersey city, and in the cars, after leaving Jersey city—when one escapes the first scrutiny.

The Camden and Amboy railroad was constructed at a period, and under such restrictions by the State, as rendered it problematical whether the road would not be a losing concern in the first years of its operation. At that time, and when it was completed, the undertaking was looked upon by all our business community as a hazardous, though eminently beneficial enterprise. It required immense energy and public spirit to carry the project through, and the act of incorporation is probably one of the most stringent on record. But the scheme was conceived by determined men, and carried into effect with a spirit of enterprise that could not fail to insure success. Immense sums were invested, and arduous labors undergone, to render the road worthy of public support. It was a popular undertaking, which the present company, first of all the community, embarked in and resolved to sustain.

"Had the project resulted in a failure, and the amount of travel and transportation been found inadequate to meet the expense of the road, the company would nevertheless have been entitled to the greatest credit for their energy and enterprise, while Philadelphia and the whole State of New Jersey would have suffered incalculable injury in their business operations. As it succeeded, however, and became a great and beneficial medium of traffic and travel, why should not the projectors reap the reward of their industry? Why should they be denied a share in the benefits which the road has conferred on the community—at least for the period of their charter?" D.

It is no new thing for those, who are systematically oppressing the masses, to accuse their victims of *ingratitude*, whenever they attempt to exact justice from their *oppressors*.

"D." says there are always found in every community plenty of *croakers* and *cavilers* whom to please would be a *miracle*, and to convince by argument, a *moral impossibility*.

At all events he is correct in *this* case—however it may be in others. There will surely be "*cavilers* and *croakers*" as long as the company are *five* hours, and charge \$4, or even \$3, for 88 miles over the *most favorable* route in the Union, of equal length, not only as to the *make* of the ground, but also as to the amount of travel and business which would pass over it if properly managed. And we doubt exceedingly whether *many* of those who are *victimized* will be convinced of the *propriety* or *justice* of the system which prohibits a *fair competition*, in such an immense business, between the two largest cities in the Union, by any arguments yet put forth by "D." He must find something more conclusive, and pungent, than his attempt to show that, in 1832, the *proprietors of this road had any doubt of its success!* They, or some of them, at least, will laugh in their sleeves, when they read that paragraph. "D." is probably a man of the *present* generation—not familiar with the past age—or he would have known that the *projectors*, and *early proprietors*, or *large shareholders*, were the *founders* of the *railroad system*—were the *first* to *plan*, and the *first* to *advocate* the *construction* of railroads in this country—long before the system was adopted in England, as a medium of general business.

If he will refer to the first vol. of the *Railroad Journal*, and to one of its *early numbers*, he will find that Col. JOHN STEVENS, of Hoboken—one of the *oldest and best men* of his age, and the *father* of the New Jersey railroads—as well as of several *titles*—presented his views, with descriptions of *railroads* and *steam carriages*, for *travel* and *transportation*, to congress, as early as December, 1811! or more than *twelve* years before the Liverpool and Manchester railroad was even *talked* about. Yet the Liverpool and Manchester railroad was in successful and profitable operation, when the year 1830 *dawned*. Yet the *Camden and Amboy* railroad had not then been *chartered*!!! Yet "D." says, "had the project resulted in a *failure*, and the amount of *travel* and *transporta-*

tion been found inadequate to meet the expenses of the road," etc—a supposition as absurd to the originators, as it would now be to suppose that a reduction of the rates of travel, and transportation, to a reasonable rate, with a proper increase of speed for passengers, would reduce the receipts, and net profits of the company.

But as the subject is to be again referred to by D. in that excellent paper, the "CITY ITEM," we will defer further comment for the present.

Railroads in Illinois.

"The bill which has recently passed the senate of the United States, making a donation to this State of a quantity of public lands to aid in the construction of a railroad from Cairo to Chicago, and from thence to some point on the Mississippi, with branches to Alton, and Covington, equal to every alternate section for six miles wide on each side of the said road, we are assured," says the Chicago Democrat of 26th May, "will pass the house of representatives and become a law.

"This grant of lands will have a controlling influence upon the destiny of this State. It will enable us to make an arrangement with our internal improvement bondholders for the construction of the railroads, and at the same time furnish means for the liquidation and extinguishment of the balance of our State debt. The facilities which these railroads will furnish for travel, and transportation of merchandise and agricultural productions, will build up large towns and cities in our State, and connect them together by the ties of commerce, and the benefits of rapid communication. Millions of acres of rich and fertile land, which lay waste and uncultivated, in consequence of its distance from market, will now be quickened into life; the solemn silence of our vast prairies will be broken, and they will soon resound with the hum of business, and echo with the golden harvest of our husbandmen. Our population will increase beyond all former precedent, and the wealth and solid capital of the State will be augmented to tenfold the cost of these railroads, by the enhanced value their construction will give to property within their vicinity.

"The bill, granting these lands, is the most just and liberal appropriation ever made by the senate. Most ably and discreetly did our senators, Judge Breeze and Douglass, bring forward, and advocate and triumphantly carry this measure through their branch of the national legislature. The masterly report made by Judge Breeze, as chairman of the committee on public lands, carried conviction on its face, and had so powerful an influence, in allaying and obviating all objections to the bill, that it passed the senate by more than two-thirds majority.

"Our senators are both deserving of equal praise, they devoted all their own strength and energies in obtaining for this State the greatest boon ever conferred upon it; a grant that will do more than all former legislation to promote the growth and prosperity of the State, redeem it from debt, elevate it to the proud ranks of the paying and solvent States, and make Illinois the Empire State of the West.

"The people will not be ungrateful to public servants who have done the State such service. If this bill becomes a law, (of which there is little doubt,) great and important duties will devolve upon the next general assembly of this State, in the adoption of the most wise and judicious measures to carry into effect the object of this grant. These lands must be preserved from the spoliation of speculators from the perils of hasty and inconsiderate legislation—and sacredly devoted to the purpose for which

they were intended. Undoubtedly our next legislature will be composed of men worthy and competent to be the guardians of such important interests."

Locomotive Engines.

New plans for locomotives are constantly offered to the inspection and use of railway companies. We find in the London Mining Journal of the 15th April two of these new plans, one of English and the other of French origin—and shall give them both a place in the Journal that our readers may have the benefit of all the new plans on this very important subject.

[IMPROVEMENTS IN LOCOMOTIVE ENGINES & CARRIAGES, Specification of patent granted to James Pearson, of New Cross, engineer, for improvements in locomotive engines and carriages. Patent dated October 7, 1847.]

The improvements, which form the subject of this patent, as set forth in the specification thereof, are illustrated by three sheets of drawings; but as the leading features of the invention are without complexity, the nature of these improvements may be thus briefly described.—The first of these improvements relates to the boilers of locomotive engines, and consists in arranging, or disposing, the fire-box about equidistant from each end of the boiler, instead of at one end, as usually practised. This is effected in the following manner:

Two short locomotive boilers, of the construction hereinafter described, are placed end to end, so that their fire-boxes abut against each other, and are in this position connected together, so as to form one long boiler; the fire-boxes thus brought together forming one common fire-box, having two doors for supplying fuel thereto, and the upper part serving as the foot-plate for the engine driver and stoker. The axle upon which the driving-wheels are fixed passes through the fire-box, and beneath the body of each short boiler, or each half of the long boiler, formed as above described—such swivel frames being for the purpose of allowing the framing of the engine and wheels to adapt themselves readily to the curvatures of the line of railway. This is effected by the following arrangement:—The swivel frames, which carry the travelling wheels, are connected together at their inner ends by tension rods, the extremities of which pass through lugs, or projections, fixed to, or formed upon, each of the swivel frames, such rods being connected thereto by nuts placed upon the screwed ends of the tension rods; and, in order that the frames thus connected together should possess flexibility, the patentee employs washers, composed of short cylinders of vulcanized India-rubber, or other elastic material, placed between said lugs and nuts. The steam chambers are situated at each end of that part of the boiler near the fire-box, and are connected together by a horizontal pipe, the top of each steam dome, or chamber, being furnished with a safety-valve, and each extremity of the boiler terminating in a chimney; one having an exhausting fan, or blower, placed therein, for the purpose of exhausting or drawing the heated air from the tubes of the boiler—such fan being worked by a cross strap, passing over a rigger on one of the trailing wheels, or in any other convenient manner.

The patentee states, that by this peculiar arrangement of the fire box, he is enabled to get the centre of gravity of the boiler very low. The drawings also exhibit coupled engines constructed on this principle—one of which shows an engine having two pairs of driving-wheels, and four pairs of trailing-wheels—the driving-wheels only being coupled. Another arrangement exhibits an engine having two driving-wheels, and eight trailing-wheels all of which are coupled together; and the same drawing shows the boiler as being constructed without a chimney, but having two fans—one at each extremity of the boiler, with a channel leading therefrom to the fire-box, for the purpose of exhausting the air from the tubes of the boiler, and returning the heated air again to the fire box, if necessary. To carry the fuel and water necessary for the working of the engine, the patentee proposes to make use of the space by the foot-plate, and to employ outside

cylinders, for imparting motion to the engine. The trailing wheels are furnished with breaks, which are under the control of the engine-driver.

Another part of these improvements relates to the construction of railway carriages, and consists in forming the framework with independent swivel frames, which are connected together by one or more tension rods, in a similar manner to that before mentioned, with respect to the construction of locomotive engines. In conclusion, the patentee states, that he does not claim the constructing of locomotive engines and carriages with bogie, or swivel frames; but what he claims is—first, the form of boiler, exhibited by the drawing annexed to, and forming part of the specification, (before described); secondly, the constructing of locomotive engines and carriages with bogie, or swivel frames, in combination with tie rods, or connecting tension rods, and pieces of vulcanised India-rubber, or other elastic material, applied thereto, in the manner, and for the purposes, particularly described and set forth in the specification; thirdly, the application to the boilers of locomotive engines, of one or more exhausting or blast fans, for the purposes set forth; fourthly, the arrangements set forth and described, with reference to the construction of coupled engines.

Morris Canal and Banking Company.—Report for 1848.

Continued from page 391.

We were obliged to omit a part of this report last week, in order to dispose of other matters in type. We now give the remaining part of the late president's report, and add to it statement A of the appendix—not "index," as printed in last number—showing the cost of machinery for the new inclined plane constructed last year—statement D, showing the average time of the round trips of the boats on this canal—statement E, in relation to the use and durability of wire ropes in England, and this country—both for inclined planes and mining purposes—and statement F, in relation to reservoirs as feeders for canals.*

These three last statements, we think, will be interesting, and perhaps useful, to some of our readers.

The following "transportation account" will show the amount expended, and the objects for which expended, in conducting the current business of the company for each year, from 1845 to 1847 inclusive, and also the amount received from that business during the same time:

TRANSPORTATION ACCOUNT, 1845, 6, AND 7.

Transportation Expenses, 1845.

Lock and plane tenders' services, etc.	\$9,847 65
Repairs of canal.	5,663 99
Salaries.	2,140 27
Expense account.	622 33
Interest account.	1,773 08
	20,037 32

Transportation Expenses, 1846.

Lock and plane tenders' services, etc.	\$11,661 20
Repairs of canal.	11,157 21
Planes.	15,068 67
Locks, tools, etc.	4,052 91
Strengthening banks.	2,000 00
Delaware ferry. Pomp. river aqueduct, etc.	721 00
Salaries.	6,498 35
Interest account.	28,813 39
Expense account, legal services.	2,126 06
Commissions.	697 50
Travelling expenses.	925 96
Transfer books.	1,035 00
Rent, fuel, printing, stationery, etc.	3,184 06
	6,968 58
	86,941 97

* The appendix is necessarily omitted, and will be given in the next number.

Transportation Expenses, 1847.		
Lock and plane tenders' services, etc.	11,468 32	
Repairs of canal planes.	10,000 14	
" " planes.	21,299 02	
Loss and damages, breaks, etc.	3,368 90	
Expense account.	2,120 80	
Salaries.	4,280 52	
Interest.	29,608 36	
	<u>82,146 06</u>	
	189,125 35	
By earnings of the Morris canal, tolls, etc., in 1845.	18,997 45	
Loss on the business for the year 1845.	1,039 87	<u>90,037 32</u>
By earnings of the Morris canal, tolls, etc., in 1846.	55,019 23	
Loss on the business for the year 1846.	31,922 74	<u>86,941 97</u>
By earnings of the Morris canal, tolls, etc., in 1847.	73,264 87	
Loss on the business for the year 1847.	8,881 19	<u>82,146 06</u>
Three years' total receipts.	147,281 55	
Three years' total losses.	41,843 80	<u>189,125 35</u>

The deficit of \$41,843 80 in the receipt to pay the expenses of conducting the business, and interest, it will be observed, occurred in the following proportions for each year, viz:

In 1845 the deficit was. \$1,039 87
In 1846 " " 31,922 74
In 1847 " " 8,881 19

—

Total. 41,843 80

Excluding the season of 1845, during which the canal was navigable but for a short time, the business of the two subsequent seasons may be usefully compared, to show that the results of neither should be taken as an indication of what the canal is capable of doing, even in its present unfinished condition, if adequately furnished with boats.

The trade of 1846 was carried on in the 108 boats belonging to the company, and the "flickers" before referred to. From the business of that year there appears to have been a deficit to pay expenses and interest, of \$31,922 74.

The trade of 1847 was commenced with the same number of boats, but during the season, 64 others were purchased and run equal to about half the season; and the deficit to pay the expenses and interest was reduced to \$8,881 19, thus showing a difference in favor of 1847 of \$23,041 55, about half of which sum was produced by the 64 boats purchased, and the balance by an increased activity of the others, the canal being in better order, the boats were subject to less detention than the year before.

Since the close of last season, arrangements have been made by which about 50 other scow boats are to run on the canal during the next season, so that besides the boats engaged in the local trade along the line, there will be more than twice as many running from the commencement of the next season, as there were from the commencement of the preceding one. It is believed, therefore, that the revenue to be derived from the canal this year, will be more than sufficient to pay expenses and interest.

The accompanying statement B will show

the tonnage transported on the canal during the last season—the amount and kind of property received at, and cleared from, the several places named on its line, and the amount of tolls received at each collector's office.

It is hardly necessary to state, that the movement of coal from the Lehigh valley, may, with safety, be relied on as the main source of trade for the Morris canal, if put in as good condition as any other route connecting it with the market. It is well known, also, that the market for the coal in question, is mainly at, and north and east of, New York.

For the amount of the anthracite coal trade of Pennsylvania, from its commencement in 1820, to 1847 inclusive, see statement C, from which it appears, that there was sent to market from the Lehigh valley last season, 643,612 tons—61,951 of which, came on to the Morris canal at its western terminus.

Of this amount, 17,885 tons were delivered at Newark, and the residue at the several places named on the line of canal. In a report of the Delaware and Raritan canal company, it is stated that more than 27,000 tons of coal were taken to Newark, via that company's canal, last season, thus making the whole amount delivered at Newark about 45,000 tons, and the whole amount delivered along the line of the Morris canal, including Newark, 90,000 tons.

Although the Morris canal has no competitor for carrying the coal consumed in the interior, yet the amount of that trade has hitherto been too inconsiderable to furnish employment, or to produce revenue enough to maintain it; and in attempting to participate in the trade referred to, at and east of Newark, it has been met by a competitor of greater power and capacity, on which the movement of property has been attended with less expense to the carrier. The consequence has been, that the small amount of coal carried to tide water, via the Morris canal, has been taken at prices that allowed the company only minimum tolls, below which there would have been no object for taking it. It is obvious, that this state of things must continue to exist until the canal is improved. In order to make the Morris canal as good an avenue as its competitor, for the trade in question, the following improvements should be made, a summary of the cost of which, is stated for each item, as taken from detailed estimates made by the company's engineer:

Enlargement to be completed between Newark and Jersey city, estimated to cost. \$18,500 00
Reconstructing the remaining ten planes west of summit, at \$21,000 each. 210,000 00
Strengthening the ten old planes east of the summit, at \$5,000 each, and two summit planes, each \$1,000. 52,000 00
New aqueduct over Pompton river. 7,000 00
To raise the banks at all places where it has not been done, so as to hold 5 feet of water on each level. 7,500 00
Ferry across Delaware river to be deepened to 5 feet at low water. 5,000 00
Making a total of. 300,000 00

By the expenditure of this sum, the canal would be rendered competent to pass boats

tons—the average cargoes passing east, however, would not probably exceed 65 tons.

It will be observed, that the principal object on which it is proposed to make this expenditure, is the inclined planes. Without further explanation, the propriety of making a distinction between those east and west of the summit, may not be fully understood; the explanation is this:

By erecting new machinery at all the planes west of the summit, the best parts of the old machinery may be taken to the planes east of the summit, and substituted for similar parts at those planes, which are more defective. In this way, it is believed, the old planes east of the summit can be made strong enough, by the expenditure of the sum estimated, to pass at one operation, both sections of a boat down, loaded with 65 or 70 tons, and up, when loaded with 40 tons.

Although a boat could not be passed over the old planes when thus improved, as quick as over the new ones, yet it could be done in less than half the time now employed. That is to say, when the old planes are thus improved, four boats loaded with 65 or 70 tons, could be passed eastwardly per hour, and the same number westwardly, when not loaded with more than 40 tons each. At present, not more than two can be passed in either direction per hour, and those going east must be limited to 50 tons, and those going west to 40.

The new planes west of the summit could be passed without subjecting the boats to more than half the detention that would occur in passing a corresponding number of lift locks; so that the whole detention incident to passing all the planes, would not exceed that of passing the same number of lift locks.

It has been stated, that not more than two boats can, at present, be passed over the old planes eastwardly per hour, loaded with 50 tons each.

Allowing the canal to be navigable 200 days, and the boats to run 12 hours per day, and we have for the capacity of the canal, $50 \times 2 \times 12 \times 200 = 240,000$ tons per season; and the detention in passing the planes, while performing the round trip, will be 23 hours, or say two days for each trip. But when the canal is improved, as proposed, its capacity would be increased to $65 \times 4 \times 12 \times 200 = 624,000$ tons per season; and the detention in passing the planes would then be as follows—say 11 new planes at 5 minutes each, is 55 minutes, 12 old planes, at 16 minutes each, is 180 minutes— $(180+55) \times 2 = 60 = 783$, or say 8 hours, instead of 23, which is equal to a reduction of $1\frac{1}{2}$ days in making the round trip. Besides those above noticed, for the last two seasons the detention incident to the failure of some part or parts of the old planes, have averaged quite $1\frac{1}{2}$ days for each round trip. Detentions of this kind, it is believed, will not occur after the proposed improvements are made.

By the improvements recommended to be made in the first instance, it would appear that the capacity of the canal would be increased from 240,000 tons to 624,000 tons.

per season. That the average cargoes of the boats navigating it would be increased from 50 to 65 tons, and the time required to make the round trip over the canal would be reduced 25 days.

With the canal thus improved, it would be competent to pass at least 500,000 tons eastwardly to tide water, besides the local trade along its line. Its ability then to participate advantageously in the through trade may be shown thus:

The Lehigh company's canal and slack water navigation extends up the Lehigh valley from Easton to Mauch Chunk 46 miles, and thence up to Whitehaven 26 miles—making in all 72 miles. It has sufficient capacity for the movement of 2,000,000 tons per season, as far east as Easton. Its locks, except a few above Mauch Chunk, have chambers large enough to pass two boats loaded with 70 tons each, at one lockage.

From Easton to New York, via the southern route—boats will be easier to pass on the Delaware division of the Pennsylvania canals to Wells' Falls, 35 miles, from thence via the outlet lock, through the Delaware and Raritan feeder and canal to Brunswick, 52 miles. From Brunswick the boats are towed by steam tugs to New York, 40 miles—making the whole distance

Miles.
From Mauch Chunk to N. Y., via this route. 175
From Mauch Chunk to Easton. 48
From Easton to N. Y., via Morris canal. 101
Total. 149

Difference in favor of Morris canal, in distance. 26

The Delaware division of the Pennsylvania canals is of the same dimensions, and has no greater capacity than the Morris canal will have when improved.

The Delaware and Raritan canal is 60 to 70 feet wide, and 6 to 7 feet deep; but any difference between the cost of movement on it, and on a corresponding distance on the Morris canal, is not more than equivalent to the detention boats must be subjected to, at Brunswick and at New York, waiting for steam tugs to tow them, which is only done at stated times; and not oftener than once or twice per day.

Besides, boats passing between Brunswick and New York are subjected to considerable delays and risk, from stormy and inclement weather. Boats for that navigation have to be provided with covers or hatches, to protect them and their cargoes in rough weather, which render them heavier and more expensive to construct and maintain, and they consequently cannot carry as large cargoes as they could if confined to canal navigation, by about 3 tons.

It will therefore be seen, that there can be no material difference in the cost of movement between the two routes, as thus compared, other than that noted above in reference to the weight of cargo that could be taken by each, and the difference in distance, which in the round trip, when reduced to time, will amount to two days in favor of the Morris canal.

The prices for delivering coal at New York from Mauch Chunk, via the southern route, for the coming season, are as follows:

	Per ton.
Freight to boatmen	\$1.10
Lehigh tolls	.35
Delaware division tolls	.20
Delaware division charge on boat at outlet lock	.31
	29
Delaware and Raritan tolls	.25
Towing between Brunswick and New York	.15
Total	2.14

The cargoes of boats carrying coal to New York, have heretofore averaged 62 tons, and the time employed in making the round trip, via Bristol, has averaged 24 days. The distance, via the outlet lock, is less by 26 miles, or 52 miles in the round trip. It is estimated that the trip will be performed in 21 days less time—or, say it is performed in 21 days, then we have $62 \text{ tons} \times 1.10 + .21 = \3.25 per day for the pay of the boatmen and use of the boat.

The round trip can be made between Mauch Chunk and New York, via the Morris canal, when improved, in 19 days, and the cargoes may average 65 tons. If we allow the boatmen the same price per day, we have $3.25 \times 19 + .65 = .95$ per ton, and the cost from Mauch Chunk to New York, via the Morris canal, would be per ton, Say for boatmen. \$0.95
" Lehigh tolls. 0.35
" Morris tolls. 0.84
Total. 2.14

The cost of transporting coal to Newark, via the southern route, is the same as to New York, while it would cost, via the Morris canal, 54 cents per ton less than to New York; consequently, the Morris canal could compete for the Newark trade on equal terms, and charge 90 cents per ton toll.

It appears then, from this comparison, that while the tolls on coal, via the southern route, remain as now established, the cost of movement would be balanced between the two routes, by allowing the Morris canal 84 cents per ton tolls to New York, and 90 cents to Newark.

The tolls being now 54 cents per ton, via the southern route, which is 30 cents less than could be charged by the Morris canal, therefore, if the comparison in other respects should prove to be correct, then the trade, of course, would always be balanced between the two routes to New York, by adding, for Morris canal tolls, to 30 cents, such sum as may be charged for tolls, via the southern route.

Or, if it should turn out that boats could take no larger cargoes to New York, via the Morris canal than via the southern route, and that the same time will be required in making the round trip on each, then the trade would be balanced between them, by imposing such tolls on the Morris canal as should be equal to the sum charged for tolls and steam towing, via the southern route, which now amounts to 69 cents per ton east of Easton.

Notwithstanding the elements of capacity, and those constituting the cost of movement, on the routes in question, have been thus analytically noticed, yet the following queries may be raised, which, if unanswered, might still leave doubts as to the results arrived at.

First.—As to the capacity of the canal.—It may be asked, What evidence is there that the round trips can be made between Jersey City and Mauch Chunk in two days less time, via the Morris canal than via the southern route?

For the answer to this question, see appendix D, which shows that the experience of the past fully justifies that conclusion.

It has been stated that the new plane No. 6 west, is competent to pass boats over the space it occupies, as quick as they are usually passed over a corresponding space on the contiguous levels, yet a detention of 5 minutes at each plane, has been allowed in the preceding comparison. It may be said, however, that the wire ropes will not be durable, and that the machinery will be expensive to maintain.

For the probability and amount of tonnage the wire ropes may be expected to pass. See appendix E, from which it appears the cost of perpetuating wire ropes on all the planes, will not probably exceed one and one quarter cents per ton on the whole amount passing over all the planes. As has been stated, the only material difference between the new plane, No. 6 west, and the three summit planes constructed since the present organization of the company, is, that the former has two tracks instead of one—has wire ropes instead of sprocket chain, and is provided with more power and strength than the others.—Except the expense incident to the failure of the sprocket wheels at two of those planes, in consequence of defects in their original construction; and of the chains not having been made strong enough—the cost of maintaining them has not exceeded \$50 each per season for the last two seasons.

Those parts of the new plane that are analogous to those not strong enough in the others, have been made more than six times as strong, while the strain on them will not be quite twice what the others have been subjected to. It is believed, therefore, that if the new planes are constructed of as imperishable materials as No. 6 has been, it is not likely the expense of perpetuating them (exclusive of the wire ropes,) will exceed that of perpetuating a corresponding number of lift locks.

Whether there has been, or can be, a sufficient quantity of water secured to supply the Morris canal, to pass a business of any considerable magnitude, may still be an unsolved problem in the public mind. The experience of the last two seasons, however, has furnished the means of its solution, for the particulars of which, see appendix F.

Before noticing these particulars, it is proper to state, that for any increase of tonnage above what passed over the canal last season, there would only be required an additional amount of water, to the extent of that discharged at its termini, by the locks and planes, in exact proportion to such increased trade. The leakage and evaporation from the canal must remain a constant quantity, whether much or little business passes over it. From a careful investigation of the subject, it has been ascertained, that quite eight

times as much water is required to provide for leakage and evaporation during the season, as would be required for 624,000 tons to pass the locks and planes at the termini of the canal.

Notwithstanding there was 42 per cent. more tonnage passed over the canal in 1847 than in 1846, and that there was 3 per cent. more water felt during the latter than the former year, yet it appears there was 8½ per cent. more water in the main reservoir on the summit, at the close of navigation in 1847, than at that of the previous season.

This discrepancy is accounted for by the canal having become tighter, and less water leaked out of it in 1847, than in 1846, which was an occurrence to have been expected, as the old lining was mostly removed or disturbed by the enlargement.

It appears also, that there was water enough in the main reservoir, at the close of the last season, to have supplied the amount discharged at the termini of the canal, incident to the passage of 405,652 tons over its entire line—even if the old planes were used in passing it—by which more than four times the quantity of water is used that would be required if others were substituted for them like the new one at No. 6 west. This difference is mainly accounted for by the water at the new plane being used under a head of nearly its whole altitude, while at the old ones, which measure the discharge at the termini, it is not used under a head of more than one-fourth the altitude of those planes. Consequently, the water remaining in the main reservoir at the close of the last season, was sufficient to have passed more than 1,600,000 tons, if measured by the improved planes. But inasmuch as those planes would not require as much water to pass any given amount of tonnage, as the lift locks, it therefore becomes necessary to substitute the locks as the measurers of the water discharged at the termini—by doing which, we still find that there was water enough in the main reservoir at the close of the last season, to have passed full 1,000,000 tons over the whole line of canal.

For a considerable part of the season, a large portion of water required for the canal, is taken from other sources than the main reservoir on the summit. There can be, therefore, no reasonable doubt but that the company has now secured more water than will be required to pass 624,000 tons per season. Should the quantity now secured fall short of what may ultimately be wanted to pass a maximum business for the canal, there will be no difficulty in securing such additional quantity as may be wanted, at a comparatively moderate expense. It is estimated that by the expenditure of a sum not exceeding \$50,000, other reservoirs can be constructed within seven or eight miles of the summit, on either side, into which would flow the water that falls on a larger territory than that from which the main reservoir is supplied.

That the canal will be competent to pass 1,000,000 tons eastwardly, when improved as proposed, so that its capacity shall be mea-

sured by its lift locks—it is only necessary to state, that there has been delivered at tide water, by the Erie canal, during the last season, nearly one and a half million tons—and that all the unenlarged portions of that canal are of the same dimensions proposed for the Morris canal, except that the former has but four feet depth of water, and the latter is to have five. The unenlarged portions of the Erie canal must, of course, measure its capacity, some of which are near tide water—they amount, in the aggregate, to more than half its entire length.

In reference to the trade that may be expected to pass over the canal when improved, it is only necessary to state, that there was sent eastwardly from Easton last season, via the Delaware division of Pennsylvania canal, (see canal commissioners' report.)

Mineral coal tons. 467,208
Other articles amounting to	" 329,973
..... 787,181	

Via Morris Canal.—Mineral coal
 tons. 61,951 |

Other articles amounting to
 " 9,568 |

..... 71,539

Total that passed E. from Easton last season. 858,720

By reference to the statistics of the coal trade from the Lehigh valley, it will be observed, that its average annual growth since the completion of the Delaware division canal, has been at the rate of about 20 per cent. per annum. If that trade should continue to increase in the same ratio for the next two seasons, it would be large enough to furnish the two avenues with more than 600,000 tons each per season. And if it should thus continue to increase, the time would not be remote when the maximum capacity of both those avenues would be required to pass it to market.

Whether the trade in question will continue to increase as rapidly as it has done, must, of course, be at present a matter of mere speculation. But that the Morris canal can be made to participate in that trade, to the extent of at least one-half of it, whatever the whole may amount to, (within the range of capacity that may be given to it,) is a position, the solution of which is attended with less difficulty.

It appears, then, that if the Morris canal was improved as proposed, it would be competent to pass eastwardly at least 624,000 tons per annum, and that then, it could participate advantageously in the through trade. And when the trade should require, it may be further improved, by substituting new planes for the old ones east of the summit. Its capacity would then be measured by its lift locks.

If we assume, then, that the local trade along the line, including Newark, would produce enough to pay expenses and interest, and 500,000 tons should be transported over the whole line to Jersey city, on which there should be charged only 50 cents per ton tolls, a net revenue would be produced of \$250,000 per season, which would be equal to more than 6 per cent. on the par value of the stock.

The local trade, it will be observed, very

and Newark was not half supplied with coal, via the Morris canal.

The local trade is a rapidly growing one, while the expenses would not be increased by passing a larger amount of business, after the planes are improved—as they would then require but very little repairs—while now the expense of maintaining the old ones is nearly as much as is required for all other purposes connected with keeping the canal in repair throughout the whole line.

From what has been stated, it appears that the canal and its appendages now stand charged with \$1,542,242 21. That the property is in a condition to produce more than enough to pay current expenses and interest on its debt—that by the expenditure of a sum not exceeding \$300,000, that property would be in a condition to produce a net revenue over and above expenses and interest, of more than six per cent. on the whole capital allowed by the charter, \$4,100,000—and that when the trade should require, it can be further improved, by the expenditure of a sum not exceeding \$300,000, by which it would be in a condition to produce a net revenue of more than twelve per cent. on its whole capital.

It is obvious, however, that these results cannot be realized within any reasonable time, unless the canal is improved earlier than it can be done, unaided, and applying only such net revenue to that object as it may hereafter produce.

Certificates having been issued for the whole amount of stock authorized by the charter, and a mortgage on the canal and its appendages having been executed, to secure the payment of the company's bonds, to the amount of 700,000—of which \$423,350 were negotiated at par, (except a small amount in the "general account")—several structures that had been commenced, were then incomplete, and the canal unproductive—the credit of the company became so much depressed that these bonds could not be negotiated at par.

It then became necessary, to enable the company to meet pressing demands, again to negotiate further loans, for which it gave its notes to the amount of \$77,806 50, to secure the payment of which, there was deposited with these notes \$165,650, six per cent. mortgage bonds as collateral—thus making the whole amount negotiated and pledged \$579,000. Therefore, until the amount pledged are redeemed, there remains undisposed of only \$121,000 of these bonds—which are the only means within the control of the board, that it can apply to the improvement of the canal, and to secure the payment of such sum as may be required to meet existing engagements, prior to its being opened for the ensuing season's business.

Whether the canal is improved faster than it can be done from the sources above referred to, must, in the opinion of the board, depend on some united action of the stockholders, with whom only resides the power to furnish any other means to accomplish that object.

It is believed, that with the sum of \$250,000, to be paid in monthly instalments, during the next twelve months, together with

nearly paid expenses and interest last season, the net revenue that may be derived from the

canal this and the next season; the debts of the company that will become due this year, and the early part of the next, can be met at maturity—the bonds which have been deposited as collateral, redeemed; and the first proposed improvements made, in time to be used on and after the opening of the season of 1849.

All of which is respectfully submitted.

By order of the board,

A. WHITNEY, President.

OFFICE OF THE MORRIS CANAL AND BANKING COMPANY OF 1844.

Jersey City, March 17, 1847.

To be continued.

Galena and Chicago Railroad.

This work has attracted a good deal of attention, and we are gratified to learn that it has been fairly commenced, that the grading of over 40 miles of it is under contract, and progressing rapidly to completion.

The following report of the president of the company to the stockholders, shows both spirit and ability equal to the occasion, and we now look with confidence to its early completion, when the city of Chicago will reap a rich harvest from her easy connection with the rich agricultural and mineral region of Wisconsin, and the upper Mississippi country. We give the president's report entire, together with a list of the directors, as follows, viz:

To the Stockholders of the Galena and Chicago Union Railroad Company:

GENTLEMEN: In behalf of the directors, I submit to you, herewith, the accompanying report of John Van Nortwick, Esq., chief engineer, showing what steps have been taken, and what progress made in the construction of a railroad from Chicago to Galena, with exhibits of the estimated cost of the road as far as Elgin, and an estimate of the sources of income to be realized to stockholders from its construction. And I also submit, herewith, the report of Francis Howe, Esq., secretary and treasurer of the Galena and Chicago Union railroad company, showing the means and resources, amount of stock subscribed, and the receipts and expenditures of the company up to the present time.

Since the annual election of directors, on the 5th of April, 1847, the board have closed the contract with Messrs. Townsend & Mather, for the stock and lands of the company held by them, by issuing to them 100 shares of the full paid stock of the company, (not bearing interest, however,) for the 1000 acres of land on the Des Plaines river, and by agreeing on certain conditions, to issue to them another 100 shares of the full paid stock of the company, on the completion of the road to Fox river.

This arrangement placed the stock and charter entirely in the hands of the directors, and secured to the company about 1000 acres (a good portion of it timber) of valuable land on the Des Plaines river, situated about the point where the road crosses the river.

The timber on portions of this land, it is believed, will prove of much value to the company for purposes of construction, and in supplying their engines with fuel, it being situated just where it is wanted, and timber being scarce in its vicinity.

After concluding this arrangement with

Messrs. Townsend & Mather, every obstacle being then removed, the board were prepared for decisive action, but, before opening their books for subscription, to the stock of the Galena and Chicago road, it was thought best to await the decision of the Michigan Central railroad company, as to the western terminus of their road, whether at St. Joseph or at New Buffalo.

Negotiations were opened with that company, favoring a terminus at New Buffalo; and steps were taken to secure the charter of the Buffalo and Mississippi railroad company, for the purpose, by means of it, (and the right of this company to extend a branch to the Indiana line,) of connecting the Michigan Central railroad with Chicago.

The Michigan Central railroad company decided to terminate their road at New Buffalo in July last, and steps were taken preparing the way for an extension of their road to Chicago about the same time. Upon this, your directors proceeded at once to announce their intention of opening books of subscription to stock, for the extension of this continuous line of railroad from Chicago westward to Galena.

Books were accordingly opened at Chicago and Galena, and at the towns intermediate, on the 10th day of August last, and about \$250,000 of stock were then subscribed.

The first expectation of the board was to obtain a general subscription from the citizens of northern Illinois and southern Wisconsin, residing along the line of the contemplated road, and in its vicinity, as indicative of their faith in the profitable character of the road when constructed, and of the general interest of the people in its construction; and, with the aid of this subscription, to open negotiations with, and solicit other subscriptions or loans from eastern capitalists, sufficient in amount to justify the commencement of the work.

The amount subscribed, however, on the opening of the books, was so liberal, and the feeling manifested along the line, so ardent, and so universal, that it was quite apparent the country, and the people immediately interested in the construction of the road, were able to, and would increase their subscriptions to an amount sufficient, in connection with the credits on iron and engines then offered us, to built the road from Chicago to Elgin at once, and own it themselves.

Experienced parties at the east, largely interested in railroad stock, and decidedly friendly to the success of the Galena and Chicago road, were consulted, and made acquainted with the particulars of our position at this juncture, and with the proposed plan for obtaining the additional means at the east, necessary to secure the completion of the road to Fox river.

They were clearly and decidedly of the opinion, that the wisest and surest way to accomplish the speedy extension and completion of the entire route to Galena, was, for the inhabitants along the line of the road, to raise the means themselves, for its commencement and completion to the Fox river and Elgin, as far as Fox river, have presented them-

assure us that the comparatively small cost of construction and extreme productiveness of the country tributary to the road, would secure such large returns as would enable us to command capital from any quarter on loans or increased subscriptions to stock for the extension of the road to Rock river, and to Galena, without delay.

This course was adopted, the object explained and approved by subscribers, and further subscriptions solicited and obtained on this basis of operation, to an extent exceeding altogether, the sum of \$350,000 (about \$10,000 of stock subscriptions have since been added,) and the work was commenced in earnest.

A corps of engineers was then (September last) immediately employed to survey and locate the line from Chicago to the Fox river, and prepare it for letting. The time occupied in doing so, has somewhat exceeded what was at first supposed to be necessary, and the road, except the first seven miles, was not prepared for letting until the 1st of March last, when the grading and bridging of the first 31 miles (inclusive of the seven miles let last fall,) was put under contract, and on very favorable terms, as will appear by reference to the report of the chief engineer herewith submitted.

By reference to that report, it will also be seen, that all the timber and ties necessary for the entire superstructure to Elgin, 41 miles, have been contracted for on favorable terms.

It has always been the desire and intention of the directors, to commence the road in a thorough and substantial manner, and if possible, with our means, to finish it with an edge rail, which all experience seems to have approved, as being greatly preferable, and in the end more economical.

A superstructure—cross ties—suited to such a rail has accordingly been adopted, and an edge rail will be procured if the means of the company shall prove sufficient to obtain it.

The extraordinary and ruinous financial difficulties of Great Britain for some months past, however, have served to tighten the money market of this country to such an extent, as to cause the withdrawal of proposals of credit on iron and engines, previously made to us, and to make it very doubtful whether the present resources of the company are equal to the purchase of an edge rail for their road, under circumstances, at all compatible with the resolutions of the board, not to exceed its means in any case, nor for any consideration.

Acting under this impression, amounting almost to conviction, the directors were induced as their only alternative to provide timber for longitudinal rails, to be placed for the time being on the superstructure of cross ties adopted for the edge rail, to receive a plate rail in the manner set forth in the accompanying report of the chief engineer.

It is also proper to remark, that many considerations suggestive of the propriety of adopting a flat or plate rail, in the first instance, as far as Fox river, have presented them-

In a country where money is worth as much as it is here, and where the means of a company are as limited as ours are, and the necessity for the immediate construction of a rail-road is so great, in consequence of the very bad character of our common roads, and of the great amount of produce to be transported over them; there are reasons favoring a commencement with a plate rail, which would not be entitled to consideration under better circumstances.

Should the future board find themselves at any time hereafter, relieved from the necessity of adopting a flat rail, in consequence of the fall of iron, or of increased funds or credit suited to their circumstances, they will, no doubt, avail themselves of a rail of greater weight and more improved form.

Upon the extension of the road beyond Elgin, a greater necessity will exist for a heavier rail, from the increased business that will result from such extension; and the flat rail, and the timber upon which it is placed between Chicago and Elgin, if used there, can then be taken up and relaid on a branch road to Beloit or to other points to which there will be occasion for branches.

From the report of the chief engineer, it will be seen, that the grades on that portion of the road between Chicago and Elgin are scarcely equalled on any other road in the country, the maximum grade going east, being but six feet, and going west, but twenty feet to the mile.

The character of the line, is also highly favorable, a great portion of it being in straight lines, and the few curves there are, all having large radii, requiring but trifling increase of power as compared with a straight line.

Owing to the champaign character of the country over which the road passes, and the consequent absence of any considerable floods in the streams it crosses, the cost of grading and bridging from Chicago to Elgin, and of the entire construction of the road, will be greatly less than that of most other roads, probably much less than that of any other substantial, well constructed road, of equal length ever built.

The chief engineer's report also shows the entire cost of this road, completed to Elgin, forty-one miles, and furnished with engines and cars sufficient to commence business, to be \$342,000, less than \$8,500 per mile, or about one-third the average cost of roads of like character in the State of New York, which fully accounts for the large earnings and dividends anticipated from it; for if it earns but 7½ per cent. on the average cost of similar roads in New York, it will pay over 22 per cent. on its actual cost.

It cannot have escaped the observation of all acquainted with the region of country to be affected by the construction of this important work, that if constructed now and extended east from Chicago, around the head of Lake Michigan till it meets the Michigan

NOTE.—The preliminary survey made, shows that grades of a character equally favorable, can be maintained all the way to Galena, with the exception of the last 10 miles, where a descent of 37 feet to the mile is found to be necessary.

Central railroad, as it soon will be, it secures to the country through which it passes, the great North-Western railroad thoroughfare, for all time to come.

No other continuous route of rail-road will ever be made to that great and rapidly improving country lying west and north-west of Lake Michigan, to the north of the southern end of that lake; if this road is established there first. No line to the south of it, near enough to compete with it, will be at all likely

to be built while the business of the country can be prosecuted upon the road in which we are now engaged. Indeed no other line to the south of it can compete with it, for the trade and travel of more than half a million of people now at the north and west of it, and tributary to it; and the only struggle we

have to secure all the great considerations and end we have in view, lies in the completion of the road to Elgin. Once finished to that point, it will promptly demonstrate its profitable character and usefulness and command the confidence of all, and the means necessary to ensure its immediate extension to its termination at Galena.

Our subscription list, numbering over twelve hundred subscribers, it will be seen by the secretary's report, exceeds in amount the sum required to complete the road with a plate rail to Elgin. Prompt payment by stockholders, generally, of all calls made to carry on the work, therefore, is all that is necessary to ensure the success of the road with our present means, and at an early day; and, as it requires nearly the whole amount now subscribed, to build the road to Elgin, it will be seen that our success depends upon payment by all of our subscribers, (with some few exceptions, where misfortune or death renders them unable,) of the amounts subscribed by them, and the protection of the rights and interests of those who do pay willingly and promptly, as nearly all do, will make it necessary for the board, in justice to paying subscribers, to require from those who have as yet failed to meet the calls made upon them, the fulfilment of the legal obligations assumed by them, to the extent of their subscriptions to the stock of the Company.

If a large overplus of subscriptions had been made, the few persons who might wish, from any cause, to forfeit their stock, might, perhaps, be permitted to do so, but, as our subscription but barely exceeds the cost of the road, it must be at once apparent to every one that all of our subscribers with the few exceptions named, must fulfil their obligations, upon the faith of which the company have undertaken the work, in order to ensure its success, and secure to those who do pay, the return for their money invested, which they have a right to expect, and which it will be incumbent upon, and the duty of the Board of Directors to take every proper means in their power to secure to them.

The interest of the whole country in the early completion of the road, however, will, it is not doubted, induce our stockholders, generally, to fulfil their engagements with little or no delay, by paying in the necessary calls on their stock, as made.

It is the desire of the present Board, if possible, to relieve their subscribers, temporarily, by making calls for instalments on stock to put twenty or twenty-five per cent. in all, until after harvest, or previous to the first of September next, and, by making temporary loans, meanwhile, to meet their wants through the summer. To enable them to succeed in this effort, however, it is absolutely necessary that the calls which are, and shall be made, be promptly met.

With assurances of every effort on their part, to execute the trust reposed in them, the board of directors look with confidence to their stockholders for that prompt and efficient support necessary to the success of the great work in hand.

W. B. OGDEN, President.

Chicago, April 5th, 1848.

DIRECTORS:

Chosen at the Annual Meeting of the Stockholders, April 5, 1848.

William B. Ogden, President; Walter L. Newberry, Charles Walker, James H. Collins, J. Young Scammon, William H. Brown, John B. Turner, Thomas Dyer, Benjamin W. Raymond, George Smith, Chicago; Charles S. Hempstead, Thomas Drummond, Galena; Allen Robbins, New York.

Secretary and Treasurer, Francis Howe.

[From the Philadelphia "Commercial List,"]

Pennsylvania Coal Trade for 1848.

From the Lehigh Mines.

The amount of coal shipped from the Lehigh mines during the week ending the 13th inst., and since the opening of the navigation, has been as follows:

	This week.	Total this year.
By Lehigh company	8,079 18	59,481 08
By Room Run	3,904 00	35,649 15
By Hazleton	3,265 00	24,450 00
By Beaver Meadow	332 16	21,198 10
By Spring Mountain	3,331 00	17,998 06
By Buck Mountain	1,389 11	18,993 10
By Cranberry Miners	250 00	309 00
White Haven	53 10	53 10
Total	90,605	151,178,133 19

* Week ending 10th inst.

From the Schuylkill Mines.

The amount of coal forwarded by Reading railroad during the week ending the 15th inst., and since the 1st of January, has been as follows:

	Tons.
From Schuylkill Haven	11,598 15
" Pottsville	4,578 01
" Port Carbon	8,679 09
" Port Clinton	3,486 13
Total this week	28,342 18
Total this year	515,777 17

The amount of coal brought to market by the Schuylkill canal during the week ending the 15th inst., and since the opening of the canal, has been as follows:—

	Tons.
From Pottsville and Port Carbon	10,294 13
" Schuylkill Haven	4,376 11
" Port Clinton	000 00
Total this week	14,671 94
Total this year	125,880 18

	Tons.
By Lehigh companies	178,133 19
By Reading railroad	515,777 17
By Schuylkill canal	125,880 18
Total	819,792 14

Iron Railway Sleepers.

We find in Herapath's Railway Journal, of 29th April, a description of an Iron Railway Sleeper, with illustrations, by a Mr. Greaves, of Manchester, which we give herewith.

The form of the bearing part, is in accordance with a plan which has often occurred to us, but we thought it very difficult to give them a bearing sufficiently permanent. It is probable, however, that this may be done, and we now think that the only objection to a cast iron bearing is in the *first cost*—though they will, probably, be cheaper in the end. We should like to see them tried.

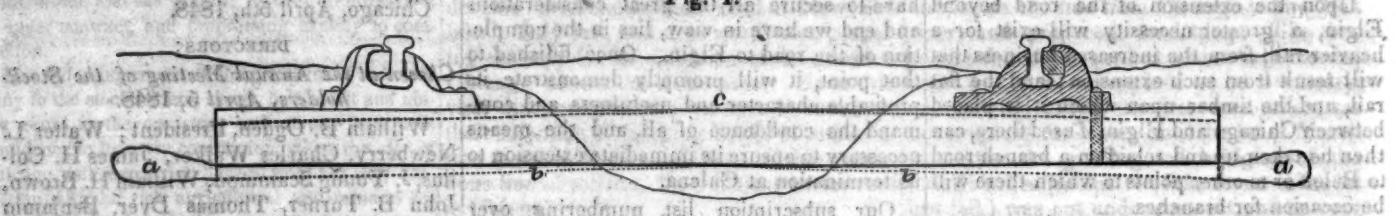
GREAVES' RAILWAY SLEEPER.

Our attention has been given to a new sleeper, patented by Mr. Greaves, of Manchester, which, from the success of the trials

that have been made, appears likely to come into extensive use upon railways. Mr. G.'s are connected together by means of tie rods, sleeper being made of cast iron, is expected of iron. The distinguishing feature of this to be more durable than wood, by whatever sleeper, however, is, the facility with which process it may be prepared to preserve it from it can be packed and re-adjusted from the surface. The chair is cast upon, and forms face, without removing or opening the ground part of, the sleeper, and thus gets rid of the around it, through two holes which are made serious difficulty experienced in keeping the for the purpose on the top of the sleeper. The present cast iron chair firmly secured to the wood sleeper. From the peculiarity of its does not much, if at all, exceed the cost of form, it appears to be well adapted to give a the wood sleeper, with the chair and pins to firmer support to the rail than the wood sleepers connect them together.

The following diagrams will enable our readers more easily to understand the subject. As stone blocks, however, have long since been superseded by wood sleepers, we need not dwell upon them.

Fig. 1.

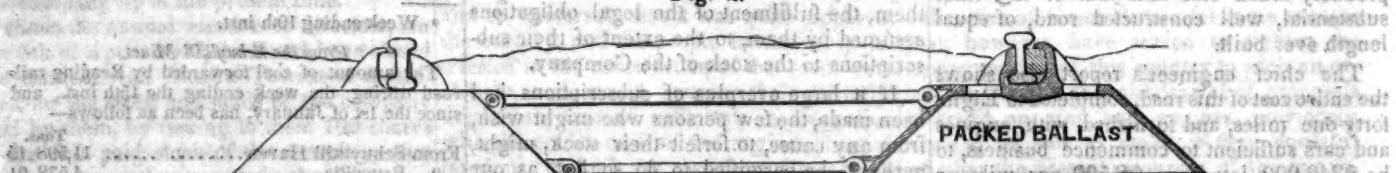


The above sketch represents the wooden sleeper, with the most approved modern chair fastened to it, by compressed oak tree nails. The dotted lines show the position of the sleeper on the transit of a train over it; the action and weight of the train have forced the ballast from underneath the ends of the sleeper in the position marked *a*, *a*, depriving the sleeper of its support at the ends, where it is most needed, and leaving it supported only in the middle. The effect of this is, that, on a train passing over it, the sleeper is bent slightly in the form of a bow, thereby destroying the proper angle of the rail, slightly altering the gauge, and increasing the traction, by always putting the engine and train in a position of travelling up an incline. The flexibility is endeavored to be remedied

on the North Western and some other lines, by having a drain cut under the middle of the sleeper, as shown in the above sketch.— The effect, however, is somewhat the same, only that, instead of having one fulcrum in the centre to rest upon, the sleeper has two fulcra at the points marked *b*, *b*, the ends being still without support; but the chief objection to wood sleepers is their want of durability. The other objections to their use may be to some extent be obviated by increasing their size and length, which is being done by several railway companies, although the expense is at the same time increased. The London and North Western, for instance, have recently advertised for wood sleepers of extraordinarily large dimensions, viz: 10 feet long, 14 inches wide, and 7 inches thick. Increased

size lessens, but does not get rid of the objections we have above stated. Engineers are much divided in opinion as to the length of time wood sleepers will last. Some tell us that they will endure, if properly prepared, six or eight years only; others say ten or twelve years; but much depends upon the description of wood used, and the situation in which the sleepers are placed. Mr. Herapath saw some fir sleepers in Belgium, that were as rotten as touchwood after having been down only four years. These, it is true, were not prepared with any preservative process. The sleeper we are considering, however, is not subject to this objection; for, being made of cast iron, there is no reason, if we are to judge of some of the old train ways still in existence, why it may not last

Fig. 2.

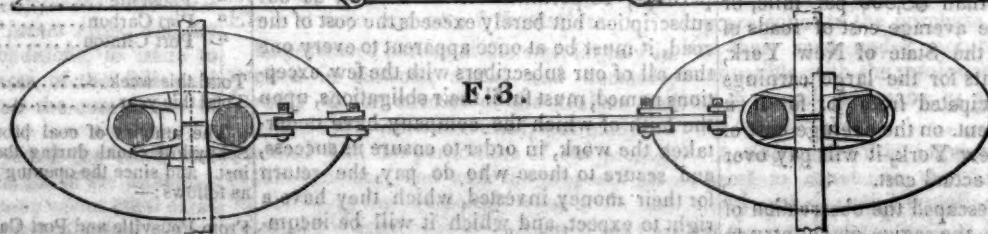


many, perhaps 40 or 50 years, or even longer.

Mr. Greaves' sleeper, of which the above is a plan and section, is a hollow cast iron box—a sort of frustum of an oval cone—open at the bottom, which is oval in shape, and tapers nearly to a point at the top, where the chair is placed. On each side of the chair is

a hole, through which the sleeper can be packed or adjusted from the surface, which is the distinguishing characteristic of the invention. It will be seen that the whole of the bearing surface of this sleeper is placed just where it is required, immediately under the rail, and that it consequently gives a much more efficient and steady support to the rail transverse wood sleeper by one fourth, or 25

than the wood sleeper, a portion of which is placed between the rails; and to the extent of two feet at least this portion of the wooden sleeper is perfectly useless as a support, besides being objectionable in other respects. The area, or bearing surface, of a pair of these sleepers exceeds that of the common transverse wood sleeper by one fourth, or 25



per cent. We have already mentioned that the first cost of the patent sleeper is much the same as that of the wood sleeper with its chairs and pins; at least calculations have been prepared, apparently with much care, showing this result. Then, with regard to the maintenance of the way after, it is very probable, from the ease with which the sleeper can be packed from the surface, that the expense of maintenance of way may be considerably reduced.

We understand that two short lengths of this sleeper have been laid down for some time upon the Lancashire and Yorkshire railway, and we have seen a letter from Mr. Hawkshaw, the engineer in chief of that line, written within these few days, in which he says, "the sleepers have been down nearly six months, and have borne the test of a very heavy traffic remarkably well. • • The experiment, so far as it has gone, is quite satisfactory." We are informed that some of these sleepers are also about to be laid down on the Eastern Counties line, not far from the Stratford station, which will give our metropolitan railway men an opportunity of personally inspecting them, which we hope they will do, and decide for their own lines accordingly.

The inventor of this sleeper is himself, we hear, a practical man, and has been connected with the formation and working of railways from the period of their first introduction; he should, consequently, be well acquainted with the defects of the system, and what is required to improve it. We trust, therefore, his invention will have fair play without any of those crotchety prejudices which too often prevent the honest trial and investigation of inventions.

Office St. Lawrence & Atlantic Railroad Co.,
Montreal, June 2d, 1848.

NOTICE TO CONTRACTORS.—SEALED
Tenders, (directed under cover to the Secretary,) will be received at this office, until the 24th inst., for the Laying of the Superstructure upon the Montreal Division of the St. Lawrence and Atlantic Railroad, extending from the River St. Lawrence to the Village of St Hyacinthe, a distance of about Thirty Miles.

Plans and Specifications will be ready for the inspection of Contractors, on the 15th of this month, and they are respectfully requested to make application to the resident engineer of said division (R. T. Bailey, Esq.) for information in regard to the manner in which the work is to be performed.

No Tender will be considered unless accompanied by the names of two respectable sureties, personally known to the company or engineer, and, in all cases, undoubted security will be required.

The work must be commenced on the 1st July, or immediately after the contracts are closed, and completed by the 1st of October next.

324 THOMAS STEERS, Secretary.

CHILLED RAILROAD WHEELS.—THE
undersigned, the *Original Inventor* of the *Plate Wheel* with solid hub, is prepared to execute all orders for the same, promptly and faithfully, and solicits a share of the patronage for those kind of wheels, which are now so much preferred, and which he originally produced after a large expenditure of time and money.

A. TIERS.

Point Pleasant Foundry,

He also offers to furnish Rolling Mill Castings, and other Mill Gearing, with promptness, having, he believes, the largest stock of such patterns to be found in the country.

A. T.

Kensington, Philadelphia Co.,

March 12, 1848.

HARTFORD AND PROVIDENCE RAIL-
ROAD.—Notice to Contractors.—Sealed proposals will be received by the Directors of the *Hartford and Providence Railroad Company*, at their office in the city of Hartford, near the Postoffice, until the 1st day of July, for the Grading, Piling, Masonry and Bridging of that portion of the road extending from the east bank of Connecticut River to Willimantic, about 29 miles.

The Maps, Profiles, Plans and Specifications will be ready for examination on and after the 26th day of June.

The line will be divided into convenient sections, and proposals may be made for one or all the sections, or for the whole work except the superstructure.

EDWARD H. BROADHEAD,

Chief Engineer H. & P. R. R.

Engineer's Office, Hartford,

May 27, 1848.

424

RAILROAD IRON—500 TONS HEAVY
■ Pattern—to arrive. For sale by
DAVIS BROOKS & CO.

June 3. t

68 Broad street, New York.

PENNSYLVANIA RAILROAD COMPANY.
Notice is hereby given that the **FOURTH**
INSTALMENT of FIVE DOLLARS per share
on the Capital Stock of this Company, is required
to be paid on or before the 1st day of July next.—
The **FIFTH INSTALMENT of FIVE DOL-**
LARS per share, on or before the 1st day of Sep-
tember, and the **SIXTH INSTALMENT of FIVE**
DOLLARS per share on or before the 1st day of
November next, at the office, No. 70 WALNUT
Street.

Payments will be received of one or more instal-
ments, or the Stock may be paid in full at the option
of the stockholders, and interest will be allowed
from date of payment.

Instalments not paid punctually will be subject to
the penalty of one per cent. per month, as required
by law.

GEORGE V. BACON,
Treasurer.

May 13—81

NEW PATENT CAR WHEELS.
THE SUBSCRIBERS ARE NOW MANU-
facturing Metallic Plate Wheels of their in-
vention, which are pronounced by those that have
used them, a superior article, and the demand for
them has met the most sanguine expectations of the
inventors. Being made of a superior quality of
Charcoal Iron, they are warranted equal to any
manufacture.

We would refer Railroad Companies and others
to the following roads that have them in use: Hartford
and New Haven, Connecticut River Railroad,
Housatonic, Harlem, Farmington, and Stonington.

SIZER & CO.

January 29, 1848. t

Springfield, Mass.

MATTEWAN MACHINE WORKS.

THE MATTEWAN COMPANY HAVE
added to their Machine Works, an extensive
LOCOMOTIVE ENGINE department, and are prepared
to execute orders for *Locomotive Engines* of every
size and pattern—also, *Tenders, Wheels, Axles*, and
other Railroad Machinery, to which they ask the
attention of those who wish such articles, before they
purchase elsewhere.

STATIONARY ENGINES, BOILERS, ETC.
Of any required size or pattern, arranged for driving
Cotton, Woollen, or other Mills, can be had on
favorable terms, and at short notice.

COTTON AND WOOLLEN MACHINERY,
of every description, embodying all the modern im-
provements, second in quality to none in this or any
other country, made to order.

MILL GEARING,

Of every description, may be had at short notice, as
this company has probably the most extensive as-
sortment of patterns in this line, in any section of
the country, and are constantly adding to them.

TOOLS.

*Turning Lathes, Slabbing, Planing, Cutting, and
Drilling Machines*, of the most approved patterns,
together with all other tools required in machine
shops, may be had at the *Mattewan Company's*
shops, Fishkill Landing, or at

39 Pine Street, New York.

WM. B. LEONARD, Agent.

FAIRBANKS' RAILROAD SCALES.

THE Subscribers are prepared to construct at short notice, *Railroad and Depot Scales*, of any desired length and capacity. Their long experience as manufacturers—their improvements in the construction of the various modifications, having reference to strength, durability, retention of adjustment, accuracy of weight and despatch in weighing—and the long and severe tests to which their scales have been subjected—combine to ensure for these scales the universal confidence of the public.

No other scales are so extensively used upon Railroads, either in the United States or Great Britain; and the manufacturers refer with confidence to the following in the United States.

Eastern Railroad, Boston and Maine R. R., Providence Railroad, Providence & Wor. R. R.,

Western Railroad, Concord R. R., Old Colony Railroad, Fitchburg R. R.,

Schenectady Railroad, Syracuse and Utica R. R.,

Baltimore & Ohio Road, Baltimore & Susq. R. R.,

Phila. & Reading Road, Schuylkill Valley R. R.,

Central (Ga.) Railroad, Macon and Western R. R.,

New York and Erie Railroad,

and other principal Railroads in the Western, Middle and Southern States.

E. & F. FAIRBANKS & CO.

St. Johnsbury, Vt.

Agents, FAIRBANKS & CO., 81 Water st. N. York.

Agents, A. B. NORRIS, 196 Market st., Philad.

April 22, 1848.

ly*17

WILLIAM JESSOP & SONS, CELEBRATED CAST-STEEL.

The subscribers have on hand, and are constantly receiving, from their manufactory,

PARK WORKS, SHEFFIELD,

Double Refined Cast Steel—Square, flat & octagon.

Best warranted Cast Steel—Square, flat & octagon.

Best Double and Single Shear Steel—Warranted.

Machinery Steel—Round.

Best and 2d gy. Sheet Steel—for Saws and other purposes.

German Steel—flat and sq., "W. I. & S." "Eagle" and "Goat" Stamps.

Genuine "Sykes," "L Blister Steel.

Best English Blister Steel, etc., etc., etc.

All of which are offered for sale on the most favorable terms, by WM. JESSOP & SONS,

91 John Street, New York.

Also by their Agents—

Curtis & Hand, 47 Commerce St., Philadelphia.

Alex. Fullerton, & Co., 119 Milk St., Boston.

Stickney & Beatty, South Charles St., Baltimore.

May 6, 1848.

THE SUBSCRIBERS ARE PREPARED TO
execute orders at their *Phoenix Works* for Rail-
road Iron of any required pattern, equal in quality
and finish to the best imported.

REEVES, BUCK & CO., Philadelphia.

ROBERT NICHOLS, Agent, No. 79 Water St., New York.

26th

DIRECT ACTION ENGINES

FOR STEAM BOATS.

THE PATENT DOUBLE CYLINDERS,

AND ALSO

THE ANNULAR RING PISTON ENGINES,

of Messrs. Mauldsay, Sons & Field, of London,

may be built in the United States, under license,

which can be obtained of their agent,

THOMAS PROSSER, C. E., 28 Platt street, New York.

May 6, 1848.

TO LOCOMOTIVE AND MARINE EN-

gine Boiler Builders. Pascal Iron Works,

Philadelphia. Welded Wrought Iron Flues, suitable

for Locomotives, Marine and other Steam En-

gine Boilers, from 2 to 5 inches in diameter. Also,

Pipes for Gas, Steam and other purposes; extra

strong Tube for Hydraulic Presses; Hollow Pi-

stons for Pumps of Steam Engines, etc. Manufactured

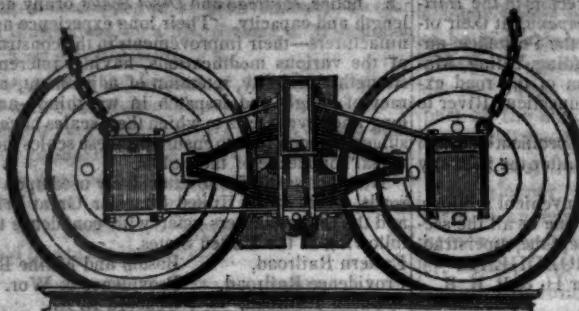
and for sale by

MORRIS TASKER & MORRIS,

Warehouse S. E., corner 3d and Walnut Sts., Phila-

delphia.

RAY'S EQUALIZING RAILWAY TRUCK.—THE SUBSCRIBER having recently formed a business connection in the City of New



York, expressly for the manufacture of the newly patented and highly approved Railroad Truck of Mr. Fowler M. Ray, is ready to receive orders for building the same, from Railroad Companies and Car Builders in the United States, and elsewhere.

The above Truck has now been in use from one to two years on several roads of sufficient length of time to test its durability, and other good qualities, and to satisfy those who have used it, as may be seen by reference to the certificates which follow this notice.

There have been several improvements lately introduced upon the Truck, such as additional springs in the bolster of passenger cars, making them delightful riding cars—adapting it to tenders, trucks forward of the locomotive, and freight cars, which, with its original good qualities, make it in all respects the most desirable truck now offered to the public.

Orders for the above, will, for the present, be executed at the New York Screw Mill, corner 33d street and 3d avenue, (late P. Cooper's rolling mills) and at the Steam Engine Shop of T. F. Secor & Co., foot of 9th street, East

TO RAILROAD COMPANIES AND BUILDERS OF MARINE AND LOCOMOTIVE ENGINES AND BOILERS.

PASCAL IRON WORKS.

WELDED WROUGHT IRON TUBES

From 4 inches to $\frac{1}{2}$ in calibre and 2 to 12 feet long, capable of sustaining pressure from 400 to 2500 lbs. per square inch, with Stop Cocks, T's, L's, and other fixtures to suit, fitting together, with screw joints, suitable for STEAM, WATER, GAS, and for LOCOMOTIVE and other STEAM BOILER PLATE.



Manufactured and for sale by

MORRIS, TASKER & MORRIS.
Warehouse S. E. Corner of Third & Walnut Streets,
PHILADELPHIA.

MANUFACTURE OF PATENT WIRE
Rope and Cables for Inclined Planes, Standing Ship Rigging, Mines, Cranes, Tillers etc., by
JOHN A. ROEBLING, Civil Engineer,
Pittsburgh, Pa.

These Ropes are in successful operation on the planes of the Portage Railroad in Pennsylvania, on the Public Slips, on Ferries and in Mines. The first rope put upon Plane No. 3, Portage Railroad, has now run 4 seasons, and is still in good condition.

NICOLL'S PATENT SAFETY SWITCH for Railroad Turnouts. This invention, for some time in successful operation on one of the principal railroads in the country, effectually prevents engines and their trains from running off the track at a switch, left wrong by accident or design.

It acts independently of the main track rails, being laid down, or removed, without cutting or displacing them.

It is never touched by passing trains, except when in use, preventing their running off the track. It is simple in its construction and operation, requiring only two Castings and two Rails; the latter, even if much worn or used, not objectionable.

Working Models of the Safety Switch may be seen at Messrs. Davenport and Bridges, Cambridgeport, Mass., and at the office of the Railroad Journal, New York.

Plans, Specifications, and all information obtained on application to the Subscriber, Inventor, and Patentee
G. A. NICOLLS.
Reading, Pa.

river, (of which firm the subscriber was late a partner) under the immediate supervision of Mr. Ray himself.

Several sets of trucks containing the latest improvements have recently been turned out for the New York and Erie railroad, and the New Jersey Transportation company, which may be seen upon said roads.

The patronage of Railroad Companies and Car Builders is respectfully solicited.

New York, May 4, 1846.

W. H. CALKINS, and Others.

To all whom it may concern:—This is to certify that the New Haven, Hartford and Springfield railroad co., have had in use six sets of F. M. Ray's patent trucks for the last 20 months, during which time it appears to me, that have proved to be the best and most economical truck now in use.

[Signed.] **WILLIAM ROE, Sup't of Power.**

I certify that F. M. Ray's Patent Equalizing Railroad Truck has been in use on the Philadelphia and Reading railroad for some time past, under a passenger car.

For simplicity of construction, economy in cost, lightness of material, and extreme ease of motion, I consider it the best truck we have ever used. Its peculiar make also renders it less liable to be thrown off the track, when passing over any obstruction. We intend using it extensively under the passenger and freight cars of the above road.

Reading, Pa., October 6, 1845. [Signed.] **G. A. NICOLLS.**

Sup't Transportation, etc., Philadelphia and Reading Railroad.

To all whom it may concern:—This is to certify that the N. Jersey Railroad and Transportation company have used Fowler M. Ray's Truck for the last seven months, during which time it has operated to our entire satisfaction. I have no hesitation in saying that it is the simplest and most economical truck now in use.

[Signed.] **T. L. SMITH,**

Jersey City, November 4, 1845. **N. Jersey Railroad and Transp. Co.**

This is to certify that F. M. Ray's Patent Equalizing Railroad Truck has been in use on the Long Island railroad for the last year, under a freight car.

For simplicity of construction, economy in cost, lightness of material and ease of motion, I consider it equal to any truck we have in use.

*Long Island Railroad Dep't, } { [Signed.] **JOHN LEACH,***

*Jamaica November 19, 1845. } { 1y19 **Sup't Motive Power.***

TO RAILROAD COMPANIES AND MANUFACTURERS OF RAILROAD MACHINERY.

The subscribers have for sale Am. and English bar iron, of all sizes; English blister, cast, shear and spring steel; Junia rods; car axles, made of double refined iron; sheet and boiler iron, cut to pattern; tires for locomotive engines, and other railroad carriage wheels, made from common and double refined B. O. iron; the latter a very superior article. The tires are made by Messrs. Baldwin & Whitney, locomotive engine manufacturers of this city. Orders addressed to them, or to us, will be promptly executed.

When the exact diameter of the wheel is stated in the order, a fit to those wheels is guaranteed, saving to the purchaser the expense of turning them out inside.

THOMAS & EDMUND GEORGE,

a45 N. E. cor. 12th and Market sts., Philad., Pa.

THE NEWCASTLE MANUFACTURING

Company continue to furnish at the Works, situated in the town of Newcastle, Del., Locomotive and other steam engines, Jack screws, Wrought iron work and Brass and Iron castings, of all kinds connected with Steamboats, Railroads, etc.; Mill Gearings of every description; Cast wheels (chilled) of any pattern and size, with Axles fitted, also with wrought tires, Springs, Boxes and bolts for Cars; Driving and other wheels for Locomotives.

The works being on an extensive scale, all orders will be executed with promptness and despatch. Communications addressed to Mr. William H. Dobbs, Superintendent, will meet with immediate attention.

ANDREW C. GRAY,

a45 President of the Newcastle Manuf. Co.

NORWICH CAR FACTORY,

NORWICH, CONNECTICUT.

At the head of navigation on the River Thames, and on the line of the Norwich and Worcester Railroad, established for the manufactory of

RAILROAD CARS,

OF EVERY DESCRIPTION, VIZ:

PASSENGER, FREIGHT AND HAND CARS,

ALSO, VARIOUS KINDS OF

ENGINE TENDERS AND SNOW PLOUGHS,

TRUCKS, WHEELS & AXLES.

Furnished and fitted at short notice.

Orders executed with promptness and despatch.

Any communication addressed to

JAMES D. MOWRY,

General Agent,

Norwich, Conn.,

Will meet with immediate attention.

1y8

LAP—WELDED WROUGHT IRON TUBES

FOR

TUBULAR BOILERS,

FROM 1 1-2 TO 8 INCHES DIAMETER.

These Tubes are of the same quality and manufacture as those so extensively used in England, Scotland, France and Germany, for Locomotive, Marine and other Steam Engine Boilers.

THOMAS PROSSER,

Patentee.

28 Platt street, New York

LAWRENCE'S ROSENDALE HYDRAULIC CEMENT.

This cement is warranted equal to any manufactured in this country, and has been

pronounced superior to Francis' "Roman."

Its value for Aqueducts, Locks, Bridges, Floors and

all Masonry exposed to dampness, is well known,

as it sets immediately under water, and increases in

solidity for years.

For sale in lots to suit purchasers, in tight paper

barrels, by

JOHN W. LAWRENCE,

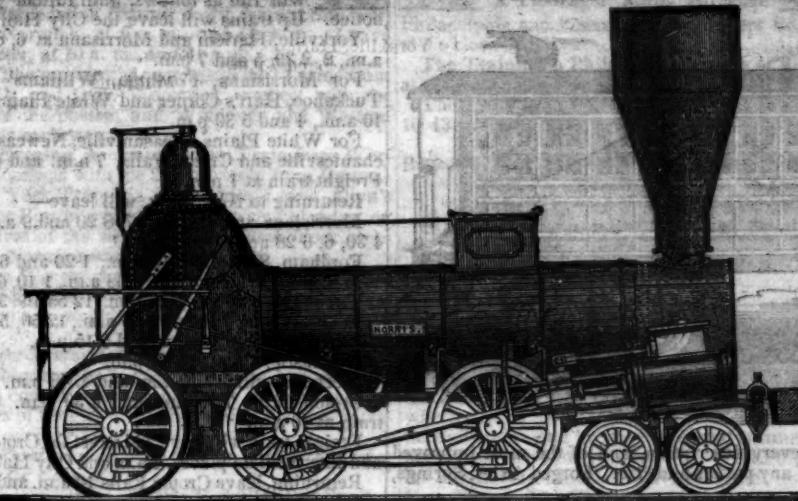
142 Front street, New York.

If Orders for the above will be received and

promptly attended to at this office.

321

NORRIS' LOCOMOTIVE WORKS.
BUSHILL, SCHUYLKILL SIXTH-ST., PHILADELPHIA.



THE UNDERSIGNED Manufacture to order Locomotive Steam Engines of any plan or size. Their shops being enlarged, and their arrangements considerably extended to facilitate the speedy execution of work in this branch, they can offer to Railway Companies unusual advantages for prompt delivery of Machinery of superior workmanship and finish.

Connected with the Locomotive business, they are also prepared to furnish, at short notice, Chilled Wheels for Cars of superior quality.

Iron and Brass castings, Axles, etc., fitted up complete with Trucks or otherwise.

NORRIS' BROTHERS.

MACHINE WORKS OF ROGERS, Ketchum & Grosvenor, Paterson, N. J. The undersigned receive orders for the following articles, manufactured by them of the most superior description in every particular. Their works being extensive and the number of hands employed being large, they are enabled to execute both large and small orders with promptness and despatch.

Railroad Work.

Locomotive steam engines and tenders; Driving and other locomotive wheels, axles, springs & flange tires; car wheels of cast iron, from a variety of patterns, and chills; car wheels of cast iron with wrought tires; axles of best American refined iron; springs; boxes and bolts for cars.

Cotton, Wool and Flax Machinery of all descriptions and of the most improved patterns, style and workmanship.

Mill gearing and Millwright work generally; hydraulic and other presses; press screws; calenders; lathes and tools of all kinds; iron and brass castings of all descriptions.

ROGERS, KETCHUM & GROSVENOR, Paterson, N. J., or 60 Wall street, N. York.

PIG AND BLOOM IRON.—THE SUBSCRIBERS are agents for the sale of numerous brands of Charcoal and Anthracite Pig Iron, suitable for Machinery, Railroad Wheels, Chains, Hollowware, etc. Also several brands of the best Puddling Iron, Juniata Blooms suitable for Wire, Boiler Plate, Axe Iron, Shovels, etc. The attention of those engaged in the manufacture of Iron is solicited by

A. WRIGHT & NEPHEW,
 122f. Vine St. Wharf, Philadelphia.

T. & C. WASON, Manufacturers of every style of Freight and Baggage Cars.—Forty rods east of the depot, Springfield, Mass.

Running parts in sets complete, Wheels, Axles, or any part of cars furnished and fitted up at short notice and in the best manner.

N. B. Particular attention paid to the manufacture of the most improved Freight Cars. We refer to the New Haven, Hartford and Springfield, Connecticut River, Harlem, Housatonic, and Western, Mass., Railroads, where our cars are now in constant use.

Dec. 25, 1847.—1.

SPRING STEEL FOR LOCOMOTIVES, Tenders and Cars. The Subscriber is engaged in manufacturing Spring Steel from $1\frac{1}{2}$ to 6 inches in width, and of any thickness required; large quantities are yearly furnished for railroad purposes, and wherever used, its quality has been approved of. The establishment being large, can execute orders with great promptitude, at reasonable prices, and the quality warranted. Address

JOAN F. WINSLOW, Agent,
 17 Albany Iron and Nail Works,

CHILLED RAILROAD WHEELS.—THE undersigned are now prepared to manufacture their improved Corrugated Car Wheels, or Wheels with any form of Spokes or Disks, by a new process which prevents all strain on the metal, such as is produced in all other chilled wheels, by the manner of casting and cooling. By this new method of manufacture, the hubs of all kinds of wheels may be made whole—that is, without dividing them into sections—thus rendering the expense of banding unnecessary; and the wheels subjected to this process will be much stronger than those of the same size and weight, when made in the ordinary way.

A. WHITNEY & SON,

Willow St. below 13th,
 Nov. 10, 1847. [t.] Philadelphia, Penna.

PATENT HAMMERED RAILROAD, SHIP and Boat Spikes. The Albany Iron and Nail Works have always on hand, of their own manufacture, a large assortment of Railroad, Ship and Boat Spikes, from 2 to 12 inches in length, and of any form of head. From the excellence of the material always used in their manufacture, and their very general use for railroads and other purposes in this country, the manufacturers have no hesitation in warranting them fully equal to the best spikes in market, both as to quality and appearance. All orders addressed to the subscriber at the works, will be promptly executed. JOHN F. WINSLOW, Agent.

Albany Iron and Nail Works, Troy, N. Y. The above spikes may be had at factory prices, of Erastus Corning & Co., Albany; Hart & Merritt, New York; J. H. Whitney, do.; E. J. Etting, Philadelphia; Wm. E. Coffin & Co., Boston. ja45



THE SUBSCRIBER has on hand a good assortment of his best Leveling and Surveying Instruments, among them his improved Compass for taking angles without the needle—also Bells, suitable for Churches, Railroad Depots, etc. ANDREW MENEELY.

West Troy, May 12, 1847.

ly 21

PATENT RAILROAD, SHIP AND BOAT Spikes. The Troy Iron and Nail Factory keeps constantly for sale a very extensive assortment of Wrought Spikes and Nails, from 3 to 10 inches, manufactured by the subscriber's Patent Machinery, which after five years' successful operation, and now almost universal use in the United States (as well as England, where the subscriber obtained a patent) are found superior to any ever offered in market.

Railroad companies may be supplied with Spikes having countersink heads suitable to holes in iron rails, to any amount and on short notice. Almost all the railroads now in progress in the United States are fastened with Spikes made at the above named factory—for which purpose they are found invaluable, as their adhesion is more than double any common spikes made by the hammer.

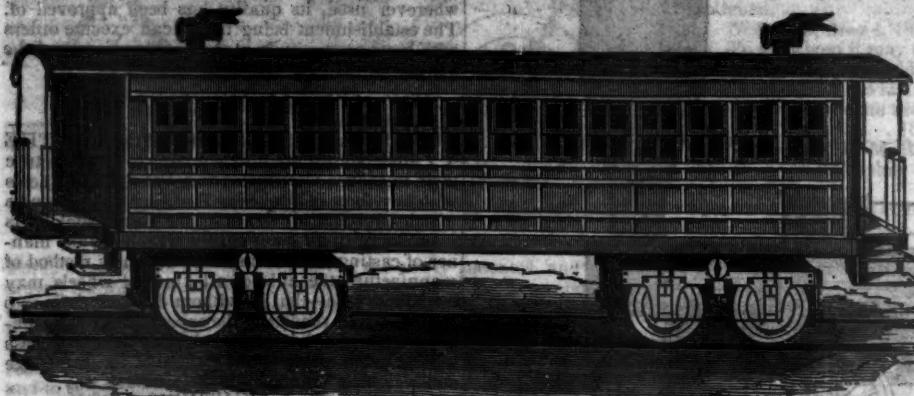
All orders directed to the Agent, Troy, N. York will be punctually attended to.

HENRY BURDEN, Agent.

Spikes are kept for sale, at Factory Prices, by & J. Townsend, Albany, and the principal iron merchants in Albany and Troy; J. I. Brower, 222 Water St., New York; A. M. Jones, Philadelphia; T. J. Viers, Baltimore; Degrand & Smith, Boston.

*** Railroad Companies would do well to forward their orders as early as practicable, as the subscriber is desirous of extending the manufacturing so as to keep pace with the daily increasing demand.

ja45

DAVENPORT & BRIDGES'
CAR WORKS, CAMBRIDGEPORT, MASS.

Manufacture to Order, Passenger and Freight Cars of every description, and of the most improved pattern; also furnish Snow Ploughs and Chilled Wheels of any pattern and size. Forged Axles, Springs, Boxes and Bolts for Cars at the lowest prices.

All orders punctually executed and forwarded to any part of the country.

Our Works are within fifteen minutes ride from State street, Boston—Omnibuses pass every fifteen minutes.

10th

FRENCH AND BAIRD'S PATENT SPARK ARRESTER.

TO THOSE INTERESTED IN Railroads, Railroad Directors and Managers are respectfully invited to examine an improved Spark-Arrestor recently patented by the undersigned.

Our improved Spark Arresters have been extensively used during the last year on both passenger & freight engines, and have been brought to such a state of perfection that no annoyance from sparks or dust from the chimney of engines on which they are used is experienced.

These Arresters are constructed on an entirely different principle from any heretofore offered to the public. The form is such that a rotary motion is imparted to the heated air, smoke and sparks passing through the chimney, and by the centrifugal force thus acquired by the sparks and dust they are separated from the smoke and steam, and thrown into an outer chamber of the chimney through openings near its top, from whence they fall by their own gravity to the bottom of this chamber; the smoke and steam passing off at the top of the chimney, through a capacious and unobstructed passage, thus arresting the sparks without impairing the power of the engine by diminishing the draught or activity of the fire in the furnace.

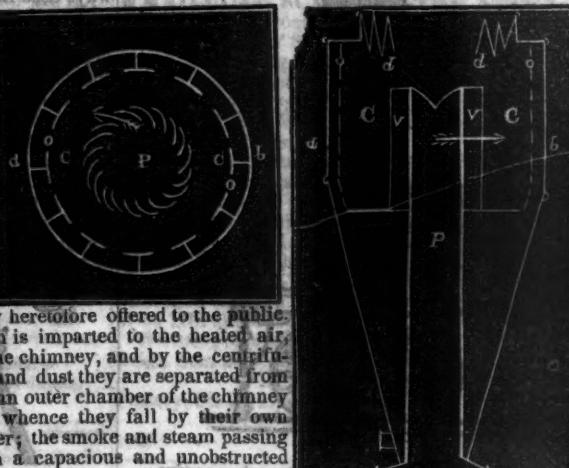
These chimneys and arresters are simple, durable and neat in appearance. They are now in use on the following roads, to the managers and other officers of which we are at liberty to refer those who may desire to purchase or obtain further information in regard to their merits.

R. L. Stevens, President Camden and Amboy Railroad Company; Richard Peters, Superintendent Georgia Railroad, Augusta, Ga.; G. A. Nicolls, Superintendent Philadelphia, Reading and Pottsville Railroad, Reading, Pa.; W. E. Morris, President Philadelphia, Germantown and Norristown Railroad Company, Philadelphia; E. B. Dudley, President W. and R. Railroad Company, Wilmington, N. C.; Col. James Gadsden, President S. C. and C. Railroad Company, Charleston, S. C.; W. C. Walker, Agent Vicksburg and Jackson Railroad, Vicksburg, Miss.; R. S. Van Rensselaer, Engineer and Sup't Hartford and New Haven Railroad; W. R. McKee, Sup't Lexington and Ohio Railroad, Lexington, Ky.; T. L. Smith, Sup't New Jersey Railroad Trans. Co.; J. Elliott, Sup't Motive Power Philadelphia and Wilmington Railroad, Wilmington, Del.; J. O. Sterns, Sup't Elizabethtown and Somerville Railroad; R. R. Cuyler, President Central Railroad Company, Savannah, Ga.; J. D. Gray, Sup't Macon Railroad, Macon, Ga.; J. H. Cleveland, Sup't Southern Railroad, Monroe, Mich.; M. F. Chittenden, Sup't M. P. Central Railroad, Detroit, Mich.; G. B. Fisk, President Long Island Railroad, Brooklyn.

Orders for these Chimneys and Arresters, addressed to the subscribers, care Messrs. Baldwin & Whit FRENCH & BAIRD.

N. B.—The subscribers will dispose of single rights, or rights for one or more States, on reasonable terms.

* The letters in the figures refer to the article given in the Journal of June, 1844.



THE SUBSCRIBER IS PREPARED TO execute at the Trenton Iron Works, orders for Railroad Iron of any required pattern, and warranted equal in every respect in point of quality to the best American or imported Rails. Also on hand and made to order, Bar Iron, Braziers' and Wire Rods, etc., etc.

PETER COOPER,

110

17 Burling Slip, New York.

RAILROAD IRON, PIG IRON, ETC.

600 Tons of T Rail 60 lbs. per yard.

25 Tons of 2 $\frac{1}{2}$ by 4 Flat Bars.

25 Tons of 2 $\frac{1}{2}$ by 9-16 Flat Bars.

100 Tons No. 1 Garrisbrié.

100 Tons Welsh Forge Pigs.

For Sale by A. & G. RALSTON & CO.

No. 4 So. Front St., Philadelphia

NEW YORK & HARLEM RAILROAD CO.—Summer Arrangement.—On and after Tuesday, June 1st, 1847, the cars

will run as follows, until further notice. Up trains will leave the City Hall for Yorkville, Harlem and Morrisania at 6, 8 and 11 a.m., 2, 2 30, 5 and 7 p.m.

For Morrisania, Fordham, Williams' Bridge, Tuckahoe, Hart's Corner and White Plains, 7 and 10 a.m., 4 and 5 30 p.m.

For White Plains, Pleasantville, Newcastle, Mechanicsville and Croton Falls, 7 a.m. and 4 p.m. Freight train at 1 p.m.

Returning to New York, will leave— Morrisania and Harlem, 7, 8 20 and 9 a.m., 1, 3, 4 30, 6, 6 28 and 8 p.m.

Fordham, 8 08 and 9 15 a.m., 1 20 and 6 15 p.m. Williams' Bridge, 8 and 9 08 a.m., 1 10, 6 08 p.m.

Tuckahoe, 7 38 and 8 25 a.m., 12 55 and 5 52 p.m. White Plains, 7 10 and 8 35 a.m., 12 50, 5 35 p.m.

Pleasantville, 8 15 a.m. and 5 15 p.m.

Newcastle, 8 a.m. and 5 p.m.

Mechanicsville, 7 48 a.m. and 4 48 p.m.

Croton Falls, 7 30 a.m. and 4 30 p.m. Freight train at 10 a.m.

Freight train will leave 32d street for Croton Falls and intermediate places, 4 a.m. and City Hall 1 p.m. Returning, leave Croton Falls 10 a.m. and 9 1/2 p.m. ON SUNDAYS, the trains will run as follows: Leave City Hall for Croton Falls, 7 a.m., 4 p.m. Croton Falls for City Hall, 7 30 a.m., 4 30 p.m. Leave City Hall for White Plains and intermediate places, 7 and 10 a.m. 4 and 5 30 p.m.

White Plains for City Hall, 7 10 and 8 35 a.m., 12 30 and 5 35 p.m.

Extra trains will be run to Harlem, Fordham and Williams' Bridge on Sunday, when the weather is fine.

The trains to and from Croton Falls will not stop on N. York island, except at Broome st. and 32d st. A car will precede each train 10 minutes to take up passengers in the city.

Fare from New York to Croton Falls and Somers \$1, to Mechanicsville 87 $\frac{1}{4}$ c., to Newcastle 75c., to Pleasantville 62 $\frac{1}{4}$ c., to White Plains 50c.

BOSTON AND MAINE RAILROAD. Upper Route, to Portland and the East.

Summer Arrangement. Commencing April 17, 1848.

Trains leave Boston as follows, viz: For Portland at 7 A.M. and 2 $\frac{1}{2}$ P.M.

For Great Falls at 7 a.m., 2 $\frac{1}{2}$ and 4 1/2 p.m. For Great Falls at 7 and 11 $\frac{1}{2}$ a.m., 2 $\frac{1}{2}$, 4, and 5 $\frac{1}{2}$ p.m. For Reading 7, 8 $\frac{1}{2}$ and 11 $\frac{1}{2}$ a.m., 2 $\frac{1}{2}$, 4 $\frac{1}{2}$, 5 $\frac{1}{2}$ and 10 p.m.

Trains leave for Boston as follows, viz: From Portland at 7 $\frac{1}{2}$ a.m., and 3 p.m. From Great Falls at 6 $\frac{1}{2}$ and 9 $\frac{1}{2}$ a.m., and 4 $\frac{1}{2}$ p.m. From Great Falls at 6 $\frac{1}{2}$, 9 $\frac{1}{2}$ and 11 a.m., 3 and 6 $\frac{1}{2}$ p.m. From Reading at 6, 7 $\frac{1}{2}$, 9 $\frac{1}{2}$, 11 $\frac{1}{2}$ a.m., 1 $\frac{1}{2}$, 4, 7 $\frac{1}{2}$, 9 $\frac{1}{2}$ p.m.

MEDFORD BRANCH TRAINS. Leave Boston at 7, 9 a.m., 12 $\frac{1}{2}$, 2 $\frac{1}{2}$, 5 $\frac{1}{2}$, 7, 10 p.m. Leave Medford at 6 $\frac{1}{2}$, 7 $\frac{1}{2}$, 10 $\frac{1}{2}$ a.m., 2, 4, 6, 9 $\frac{1}{2}$ p.m.

The Depot in Boston is on Haymarket Square. CHAS. MINOT, Super't. Boston, April 15, 1848.

BOSTON AND PROVIDENCE RAILROAD. Summer Arrangement. On and after Monday, April 3, 1848, the

Trains will run as follows: Steamboat Train—Leaves Boston daily, except Sunday, at 5 o'clock p.m.

Accommodation Trains—Leave Boston at 7 and 11 a.m. and 4 p.m., and Providence at 7 $\frac{1}{2}$ and 11 a.m. and 4 $\frac{1}{2}$ p.m.

Pawtucket Train—Leaves Boston at 4 p.m. and Pawtucket at 7, 10 a.m.

Dedham Trains—Leave Boston at 8 a.m., and 12 $\frac{1}{2}$, 3 $\frac{1}{2}$, 6 $\frac{1}{2}$ and 9 p.m. Leave Dedham at 7 and 9 $\frac{1}{2}$ a.m. and 2 $\frac{1}{2}$, 5 $\frac{1}{2}$ and 8 p.m.

Stoughton Trains—Leave Boston at 11 a.m. and 5 p.m. Leave Stoughton at 7, 10 a.m. and 3 $\frac{1}{2}$ p.m.

WM. RAYMOND LEE, Super't.

RAILROAD IRON AND LOCOMOTIVE TYRES imported to order and constantly in hand by A. & G. RALSTON & CO. Mar. 20th 1848. 4 South Front St., Philadelphia.

NORWICH AND WORCESTER RAIL-
Road. Summer Arrangement. Change of
Hours. Commencing on
Wednesday, May 1st, 1848.

Accommodation Trains, daily, (except Sunday.)
Leave Norwich, at 6 a. m., and 4½ p. m. Leave
Worcester, at 10 a. m., and 4½ p. m.

The morning Accommodation Trains from
Norwich, and from Worcester, connect with the
trains of the Boston, and Worcester and Western
railroads each way.

The Evening Accommodation Train from Worcester
connects with the 2½ p. m. train from Boston.

New York Train via Steamboat—Leave Allyn's
Point for Boston, every morning, except Monday, on
the arrival of the steamboat from New York, stop-
ping at Norwich and Danielsonville.

Leave Worcester for New York, upon the arrival
of the train from Boston, at about 6½ p. m., daily, ex-
cept Sunday, stopping at Danielsonville and Nor-
wich.

Freight Trains daily each way, except Sunday.—
Leave Norwich at 7, and Worcester at 6 30 a. m.
Special contracts will be made for cargoes, or large
quantities of freight, on application to the superinten-
dent.

Fares are less when paid for Tickets than when
paid in the Cars.

S. H. P. LEE, Jr., Sup't.

BALTIMORE AND SUSQUEHANNA
Railroad.—Reduction of Fare. Morning and
Afternoon Trains between Balti-

more and York.—The Passenger
trains run daily, except Sunday, as follows:
Leaves Baltimore at..... 9 a. m. and 3½ p. m.
Arrives at..... 9 a. m. and 6½ p. m.
Leaves York at..... 5 a. m. and 3 p. m.
Arrives at..... 12½ p. m. and 8 p. m.
Leaves York for Columbia at..... 1½ p. m. and 8 a. m.
Leaves Columbia for York at..... 8 a. m. and 2 p. m.

FARE.

Fare to York.....	\$1 50
" Wrightsville.....	2 00
" Columbia.....	2 12

Way points in proportion.

PITTSBURG, GETTYSBURG AND HARRISBURG.

Through tickets to Pittsburg via stage to Har-
risburg..... \$9
Or via Lancaster by railroad..... 10

Through tickets to Harrisburg or Gettysburg.....

In connection with the afternoon train at 3½ o'clock,
a horse car is run to Green Spring and Owing's
Mill, arriving at the Mills at..... 5½ p. m.

Returning, leaves Owing's Mills at..... 7 a. m.

D. C. H. BORDLEY, Sup't.

31½ Ticket Office, 63 North st.

BALTIMORE AND OHIO RAILROAD.
MAIN STEM. The Train carrying the
Great Western Mail leaves Bal-

timore every morning at 7½ and
Cumberland at 8 o'clock, passing Ellicott's Mills,
Frederick, Harpers Ferry, Martinsburg and Han-
cock, connecting daily each way with the Wash-
ington Trains at the Relay House seven miles
from Baltimore, with the Winchester Trains at
Harpers Ferry—with the various railroad and
steamboat lines between Baltimore and Philadelphia
and with the lines of Post Coaches between Cum-
berland and Wheeling and the fine Steamboats on
the Monongahela. Slack Water between Brown-
sville and Pittsburgh. Time of arrival at both Cum-
berland and Baltimore 5½ P. M. Fare between
those points \$7, and 4 cents per mile for less distances.
Fare through to Wheeling \$11 and time about
36 hours, to Pittsburgh \$10, and time about 32 hours.
Through tickets from Philadelphia to Wheeling
\$13, to Pittsburgh \$12. Extra train daily except
Sundays from Baltimore to Frederick at 4 P. M.,
and from Frederick to Baltimore at 8 A. M.

WASHINGTON BRANCH.
Daily trains at 9 A. M. and 5 P. M. and 12 at
night from Baltimore and at 6 A. M. and 5½ P. M.
from Washington, connecting daily with the lines
North, South and West, at Baltimore, Washington
and the Relay house. Fare \$1 60 through between
Baltimore and Washington, in either direction, 4
cents per mile for intermediate distances.

PHILADELPHIA AND READING RAIL-
ROAD.—Passenger Train Arrangement for

1848.

A Passenger Train will leave Philadelphia and Pottsville daily, except Sundays, at 9 o'clock A. M.

The Train from Philadelphia arrives at Reading at 12 18 M.

The Train from Pottsville arrives at Reading at 10 43 A. M.

Fares. Miles. No. 1. No. 2.

Between Phila. and Pottsville, 92 \$3 50 and \$3 00

" Reading, 58 2 25 and 1 90

" Pottsville 34 1 40 and 1 20

Five minutes allowed at Reading; and three at
other way stations.

Passenger Depot in Philadelphia corner of Broad
and Vine streets.

8½

SOUTH CAROLINA RAILROAD.—A
Passenger Train runs daily from Charleston,

on the arrival of the boats from

Wilmington, N. C., in connection

with trains on the Georgia, and Western and Atlan-
tic Railroads—and by stage lines and steamers con-
nects with the Montgomery and West Point, and the
Tuscumbia Railroad in N. Alabama.

Fare through from Charleston to Montgomery

daily..... \$26 50

Fare through from Charleston to Huntsville,

Decatur and Tuscumbia..... 22 00

The South Carolina Railroad Co. engage to re-
ceive merchandize consigned to their order, and to
forward the same to any point on their road; and to
the different stations on the Georgia and Western
and Atlantic railroad; and to Montgomery, Ala., by
the West Point and Montgomery Railroad.

JOHN KING, Jr., Agent.

24½

CENTRAL AND MACON AND WEST-
ERN Railroads, Ga.—These Roads with the

Western and Atlantic Railroad

of the State of Georgia, form a continuous line from Savannah to Oothcaloga, Ga., of 371 miles, viz:

Miles.

Savannah to Macon—Central Railroad..... 190

Macon to Atlanta—Macon and Western..... 101

Atlanta to Oothcaloga—Western and Atlantic..... 80

Goods will be carried from Savannah to Atlanta
and Oothcaloga, at the following rates, viz:

On Weight Goods—Sugar, Cof-
fee, Liquor, Bagging, Rope,

Butter, Cheese, Tobacco,

Leather, Hides, Cotton

Yarns, Copper, Tin, Bar &

Sheet Iron, Hollow Ware &

Castings..... 30 50

On Measurement Goods—Box-
es of Hats, Bonnets and Fur-
niture, per cubic foot..... 0 20

Boxes and Bales of Dry Goods,

Saddlery, Glass, Paints,

Drugs and Confectionary,

per cubic foot..... 0 20 pr. 100 lbs. 35

Crockery, per cubic foot..... 0 15 " 35

Molasses and Oil, per hhd.,

(smallercasksin proportion). 9 00

12 50

Ploughs, (large,) Cultivators,

Corn Shellers, and Straw

Cutters, each..... 1 25

1 50

Ploughs, (small,) and Wheel-
barrows..... 0 80

1 05

Salt, per Liverpool Sack..... 0 70

0 95

Passage—Savannah to Atlanta, \$10; Children,

under 12 years of age, half price,

Savannah to Macon, \$7.

Goods consigned to the subscriber will be for-
warded free of Commissions.

Freight may be paid at Savannah, Atlanta
or Oothcaloga.

F. WINTER, Forwarding Agent, C. R. R.

Savannah, At g. 15th, 1846.

NEW YORK ANDERIE RAILROAD LINE.
SUMMER ARRANGEMENT. For passen-

gers, twice each way daily, (except Sunday,) leave New

York from the foot of Duane St. at 7 o'clock, A. M.
and at 4 o'clock, P. M. by steamboat, for Piermont,
thence by cars to Ramapo, Monroe, Chester, Goshen,
Middletown, Otisville, and the intermediate
stations.

The return trains for New York will leave Otis-
ville at 6 30, A. M. and 4 15, P. M.; Middletown at
7 A. M. and 4 40, P. M.; Goshen at 7 22, A. M. and
5 3, P. M.; Chester at 7 35, A. M. and 5 18, P. M.
Fare between New York and Otisville, \$1 50;
way-fare in proportion.

For MILK—Leave Otisville at 5½ o'clock, morn-
ing and evening.

For FREIGHT—The barges "Samuel Marsh and
Henry Suydam, Jr." will leave New York (from
the foot of Duane St.) at 5 o'clock, P. M. daily (ex-
cept Sundays.)

No freight will be received in New York after 5
o'clock, P. M.

Freight for New York will be taken by the trains
leaving Otisville at 10½ o'clock, A. M.; Middletown
at 11½, A. M.; Goshen at 12½, P. M.; Chester at 1
o'clock, P. M., etc., etc.

For farther particulars, apply to J. F. CLARK-
SON, Agent, corner of Duane and West Sts., New
York, or to S. S. POST, Superintendent Transpor-
tation, Piermont.

H. C. SEYMOUR, Sup't.

LITTLE MIAMI RAILROAD COMPANY.

Fall and Winter Arrangement, 1847. On and
after Monday, September 20th, until further notice, a Passenger
train will run as follows:

Leave Cincinnati daily at 9 A. M., for Milford,
Foster's Crossing, Deerfield, Morrow, Fort Ancient,
Freeport, Waynesville, Spring Valley, Xenia, Yellow
Springs, and Springfield. Returning, will leave
Springfield at 4½ a. m. Upward train arrives at
Springfield at 2½ p. m. Downward train arrives at
Cincinnati at 10½ a. m.

Freight trains will run each way daily.

Messrs. Neil, Moore & Co. are running the fol-
lowing stage lines in connection with the road:

A daily line from Xenia to Columbus and Wheel-
ing, carrying the great Eastern mail.

Daily lines from Springfield to Columbus, Zanes-
ville and Wheeling. Also to Urbana and Bellefontaine.

A line of Hacks runs daily in connection with
the train between Deerfield and Lebanon.

Passengers leaving for New York and Boston, ar-
rive at Sandusky city via Urbana, Bellefontaine &
the Mad River and Lake Erie railroad, in 27 hours,
including several hours' sleep at Bellefontaine. To
the same point via Columbus, Delaware, Mansfield
and the Mansfield and Sandusky city railroad, in 32
hours. Distance from Cincinnati to Springfield by
railroad..... 34 miles.

From Springfield to Bellefontaine by stage,

over a good Summer road..... 32 "

From Bellefontaine to Sandusky city by

railroad..... 102 "

FARE—From Cincinnati to Lebanon.... \$1 00

" " Xenia..... 1 50

" " Springfield..... 2 00

" " Columbus..... 4 00

" " Sandusky city 7 00

The Passenger trains runs in connection with
Strader & Gorman's line of Mail Packets to Loui-
ville.

Tickets can be procured at the Broadway Hotel,
Dennison House, or at the Depot of the Company
on East Front street.

Further information and through tickets for the
Stage lines, may be procured at F. Campbell, Agent
on Front street, near Broadway.

The company will not be responsible for baggage
beyond 50 dollars in value, unless the same is re-
turned to the conductor or agent, and freight paid at
of a passage for every \$500 in value over that
amount.

W. H. CLEMENT, Sup't.

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GEORGIA RAILROAD. FROM AUGUSTA to ATLANTA—171 MILES. AND WESTERN AND ATLANTIC RAILROAD FROM ATLANTA TO DALTON, 100 MILES.

This Road in connection with the South Carolina Railroad and Western and Atlantic Railroad now forms a continuous line, 408 miles in length, from Charleston to Dalton (Cross Plains) in Murray county, Ga.—32 miles from Chattanooga, Tenn.

RATES OF FREIGHT.

	Between Augusta and Dalton	Between Charleston and Dalton
271 miles.	408 miles.	
1st class. Boxes of Hats, Bonnets, and Furniture, per cubic foot.	\$0 18	\$0 28
2d class. Boxes and Bales of Dry Goods, Sadlery, Glass, Paints, Drugs and Confectionary, per 100 lbs.	1 00	1 50
3d class. Sugar, Coffee, Liquor, Bagging, Rope, Cotton Yarns, Tobacco, Leather, Hides, Copper, Tin, Feathers, Sheet Iron, Hollow Ware, Castings, Crockery, etc.	0 60	0 85
4th class. Flour, Rice, Bacon, Pork, Beef, Fish, Lard, Tallow, Beeswax, Bar Iron, Ginseng, Mill Gearing, Pig Iron, and Grindstones, etc.	0 40	0 65
Cotton, per 100 lbs.	0 45	0 7
Molasses, per hogshead.	8 50	13 50
" " barrel.	2 50	4 25
Salt per bushel.	0 18	
Salt per Liverpool sack.	0 65	
Ploughs, Corn Shellers, Cultivators, Straw Cutters, Wheelbarrows.	0 75	1 50

German or other emigrants, in lots of 20 or more, will be carried over the above roads at 2 cents per mile.

Goods consigned to S. C. Railroad Co. will be forwarded free of commissions. Freight payable at Dalton.

F. C. ARMS,
Supt. of Transportation.

Augusta, Ga., July 15, 1847.

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THE WESTERN AND ATLANTIC RAILROAD.—This Road is now in operation to Oothcaloga, a distance of 80 miles, and connects daily (Sundays excepted) with the Georgia Railroad.

From Kingston, on this road, there is a tri-weekly line of stages, which leave on the arrival of the cars on Tuesday, Thursday and Saturday, for Warren- ton, Huntsville, Decatur and Tuscaloosa, Alabama, and Memphis, Tennessee.

On the same days, the stages leave Oothcaloga for Chattanooga, Jasper, Murfreesborough, Knoxville and Nashville, Tennessee.

This is the most expeditious route from the east to any of these places.

CHAS. F. M. GARNETT,
Chief Engineer.

Atlanta, Georgia, April 16th, 1846

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CENTRAL RAILROAD-FROM SAVANNAH to Macon, Distance 190 miles.

This Road is open for the transportation of Passengers and Freight. Rates of Passage, \$8 00. Freight—On weight goods generally... 50 cts. per hundred. On measurement goods... 13 cts. per cubic ft. On brls. wet (except molasses and oil)... \$1 50 per barrel. On brls. dry (except lime)... 80 cts. per barrel. On iron in pigs or bars, castings for mills, and unboxed machinery... 40 cts. per hundred. On hhd. and pipes of liquor, not over 120 gallons... \$5 00 per hhd. On molasses and oil... \$6 00 per hhd.

Goods addressed to F. WINTER, Agent, forwarder of commission. THOMAS PURSE,
y40 Genl. Supt. Transportation.

PHILADELPHIA, WILMINGTON & BALTIMORE RAILROAD.—1848.

SUMMER ARRANGEMENT.

United States Mail Lines between Philadelphia and Baltimore. Fare, \$3.

On and after Monday, April 3d, the Mail Lines between Philadelphia and Baltimore will run as follows, viz:

MORNING LINE.

Per Philadelphia, Wilmington and Baltimore Railroad, via Chester, Wilmington, Newark, Elkton, Havre de Grace, etc., will leave Philadelphia, from Depot, 11th and Market streets, daily (except Sunday) at 8 A.M., and Baltimore from Depot, Pratt street, at 9 o'clock, A.M.

A Second Class Car will be run with the morning line. Fare, \$2.

Tickets must positively be procured at the Office for this car, as none will be sold by the conductors.

AFTERNOON LINE.

Via Newcastle and Frenchtown, will leave Philadelphia, from Dock Street Wharf, per Steamboat Robert Morris, daily (except Sunday) at 2 P.M., and Baltimore, from Bowly's Wharf, at 2 P.M.

Supper provided on board the boat.

NIGHT LINE.

Per Philadelphia, Wilmington and Baltimore Railroad, will leave Philadelphia, from depot, 11th and Market streets, daily, at 11 P.M., and Baltimore at 8 P.M.

WHEELING AND PITTSBURG.

Tickets through to Wheeling or Pittsburgh, can be procured at the depot, or on board of the steamboat. Fare to Wheeling, \$13. Fare to Pittsburgh, \$12.

The trains leave Baltimore for the west at 7 A.M. and 4 P.M.

SUNDAY MAIL LINE.

The only line for Baltimore on Sunday leaves the depot, 11th and Market streets, at 10 P.M.

Passengers for these lines must procure their Tickets at the office before taking their seats in the cars.

NOTICE.—All Baggage by these lines is at its owner's risk, and passengers are expressly prohibited taking anything as baggage, except their wearing apparel. 50 lbs. baggage allowed each passenger.

WILMINGTON ACCOMMODATION TRAINS.

On and after Monday, April 3d, the Accommodation Trains, stopping at all the intermediate places between Philadelphia and Wilmington, will leave as follows, viz:

Leave Philadelphia, from depot 11th and Market streets, daily (Sundays excepted) at 1 1/2 and 4 P.M.

Leave Wilmington, from the depot, Water street, daily (except Sunday) at 7 1/2 A.M. and 4 1/2 P.M.

The Freight Accommodation Train will leave Philadelphia at 7 P.M. and Wilmington at 7 P.M.

The Mail Trains stopping at Chester and Wilmington, leave Philadelphia at 8 A.M. and 10 P.M. Wilmington at 1 o'clock, P.M., and 12 midnight. Fare to Wilmington, 50 cts. Fare to Chester, 25 cts.

G. H. HUDDELL, Agent.

March 23, 1848.

DEAN, PACKARD & MILLS,

MANUFACTURERS OF ALL KINDS OF

RAILROAD CARS,

SUCH AS

PASSENGER, FREIGHT AND CRANK CARS,

ALSO

SNOW PLOUGHS AND ENGINE TENDERS

OF VARIOUS KINDS.

CAR WHEELS and AXLES fitted and furnished at short notice; also, STEEL SPRINGS of various kinds; and

SHAFTING FOR FACTORIES.

The above may be had at order at our Car Factory,
REUEL DEAN,
ELIJAH PACKARD,
ISAAC MILLS,
SPRINGFIELD, MASS.

ly48

AP-WELDED WROUGHT IRON TUBES

for Tubular Boilers, from 1 1/2 to 15 inches diameter, and any length not exceeding 17 feet—manufactured by the Caledonian Tube Company, Glasgow, and for sale by

IRVING VAN WART,

12 Platt street, New York.

JOB CUTLER, Patentee.

These Tubes are extensively used by the British Government, and by the principal Engineers and Steam Marine and Railway Companies in the Kingdom.

ENGINEERS' AND SURVEYORS' INSTRUMENTS MADE BY

EDMUND DRAPER,

Surviving partner of

STANCLIFFE & DRAPER.



No 23 Pear street,
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below Walnut,
Philadelphia.

AMERICAN RAILROAD JOURNAL.

OFFICE AT THE FRANKLIN HOUSE,

105 Chestnut Street,

PHILADELPHIA, PA.

This is the only periodical having a general circulation throughout the Union, in which all matters connected with public works can be brought to the notice of all persons in any way interested in these undertakings. Hence it offers peculiar advantages for advertising times of departure, rates of fare and freight, improvements in machinery, materials, as iron, timber, stone, cement, etc. It is also the best medium for advertising contracts, and placing the merits of new undertakings fairly before the public.

TERMS.—Five Dollars a year, *in advance.*

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LETTERS and COMMUNICATIONS for this Journal may be directed to the *Editor*,
D. K. MINOR.

Secretary of the Convention.